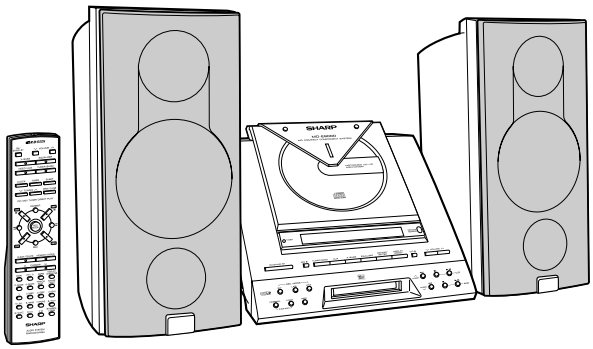
SHARP SERVICE MANUAL

No. S8151MDE9000H



MD COMPACT COMPONENT SYSTEM

MODEL MD-E9000H

MD-E9000H MD Compact Component System consisting of MD-E9000H (main unit) and CP-E9000H (speaker system).

- In the interests of user-safety the set should be restored to its original condition and only parts identical to those specified should be used.

CONTENTS

Page

SAFETY PRECAUTION OF MD SECTION FOR SERVICE MANUAL 2
SAFETY PRECAUTION OF CD SECTION FOR SERVICE MANUAL 3
IMPORTANT SERVICE NOTES (FOR U.K. ONLY) 4
SPECIFICATIONS 4
NAMES OF PARTS 5
OPERATION MANUAL 7
DISASSEMBLY 12
REMOVING AND REINSTALLING THE MAIN PARTS 15
TEST MODE 17
ADJUSTMENT 22
ERROR MESSAGE LIST 32
EEPROM WRITING PROCEDURE 33
NOTES ON SCHEMATIC DIAGRAM 37
TYPES OF TRANSISTOR AND LED 37
BLOCK DIAGRAM 38
WIRING SIDE OF P.W.BOARD 42
SCHEMATIC DIAGRAM 52
VOLTAGE 64
WAVEFORMS OF CD CIRCUIT 65
WAVEFORMS OF MD CIRCUIT 66
TROUBLESHOOTING 68
FUNCTION TABLE OF IC 76
FL DISPLAY 90
PARTS GUIDE/EXPLODED VIEW
PACKING METHOD (FOR U.K. ONLY)

SHARP CORPORATION

This document has been published to be used for after sales service only.
The contents are subject to change without notice.

MD-E9000H

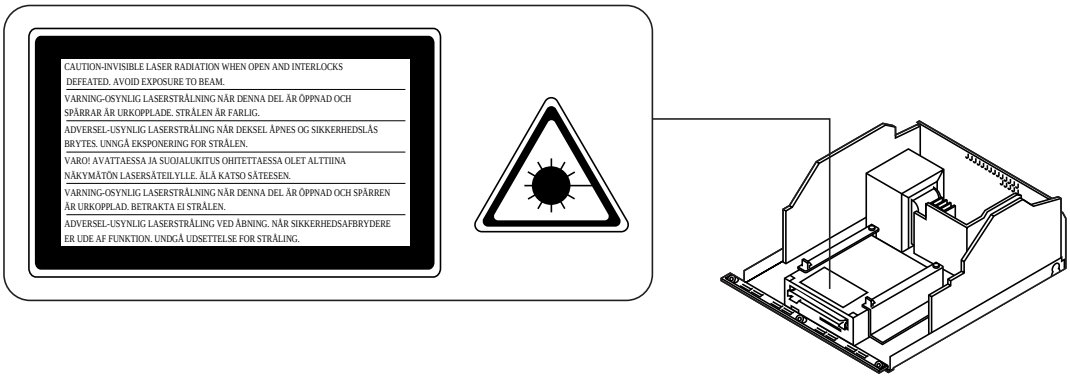
SAFETY PRECAUTION OF MD SECTION FOR SERVICE MANUAL

WARNINGS

The AEL (Accessible Emission Level) of the laser power output is less than class 1 but the laser component is capable of emitting radiation exceeding the limit for Class 1. Therefore it is important that the following precautions are observer during servicing to protect your eyes against exposure to the laser beam.

1) When the unit case cover is removed and LOADING SW (SW1932) is turned on and then PLAY SW (SW1934 mechanism PWB) is turned on in a few second.
   The laser will light for several second to detect a disk.
2) The laser power output of the pickup unit and replacement service parts are all factory preset before shipment.
   Do not attempt to readjust the laser pickup unit during replacement or servicing.
3) Under no circumstances stare into the pickup lens at any time.
4) If laser optical unit becomes faulty, replace the complete laser optical unit.
5) CAUTION-Use of controls or adjustments, or performance of procedures other than those specified herein may result in hazardous radiation exposure.

Laser Diode Properties
- Material: GaAlAs
- Wavelength: 785 nm
- Pluse time:
  Read mode: 0.8 mW Continuous
  Write mode: max 10 m W 0.5S
  min cycle 1.5S
  Repetition


CAUTION-INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCKS DEFEATED. AVOID EXPOSURE TO BEAM.
VARNING-OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD OCH SPÄRRAR ÄR URKOPPLADE. STRÅLEN ÄR FARLIG.
ADVERSEL-USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES OG SIKKERHEDSLÅS BRYTES. UNNGÅ EKSPONERING FOR STRÅLEN.
VARO! AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA NÄKYMÄTÖN LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEN.
VARNING-OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD OCH SPÄRREN ÄR URKOPPLAD. BETRAKTA EI STRÅLEN.
ADVERSEL-USYNLIG LASERSTRÅLING VED ÅBNING. NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION. UNDGÅ UDSETTELSE FOR STRÅLING.

VARO !	Avattaessa ja suojalukitus ohitettaessa olet alttiina näkymättömälle lasersäteilylle. Älä katso säteeseen.
VARNING!	Osynlig laserstralning när denna del är öppnad och spärren är urkopplad. Betrakta ej strälen.

Precaution to be taken when replacing and servicing the laser pickup.
The following precautions must be observed during servicing to protect your eyesvagainst exposure to the laser.
Warning of possible eye damage when repairing:
If the AC power plug is connected when the inner cover of the unit is removed, the laser will light up during focus access (about 1 second) (Fig. 2-1).
During this operation, the laser will leak from the opening between the magnetic head and cartridge holder (Fig. 2-2).
In order to protect your eyes, you must not look at the laser during repair.
Before repairing, be sure to disconnect the AC power plug.

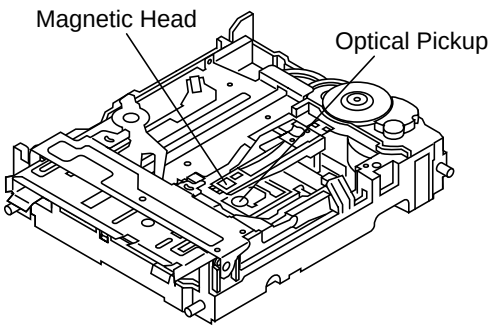


Figure 2-1

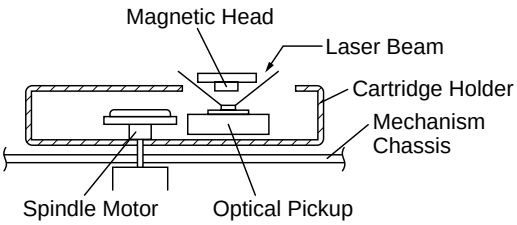


Figure 2-2

SAFETY PRECAUTION OF CD SECTION FOR SERVICE MANUAL

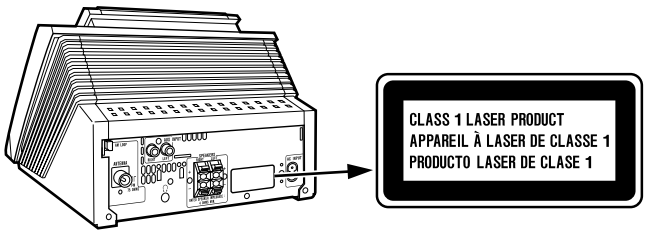
WARNINGS

Precaution to be taken when replacing and servicing the Laser Pickup.

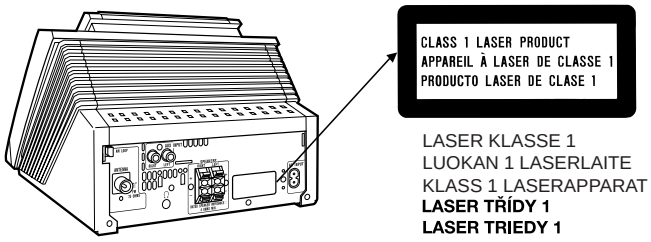
The AEL (Accessible Emission Level) of Laser Power Output for this model is specified to be lower than Class 1 Requirements. However, the following precautions must be observed during servicing to protect your eyes against exposure to the Laser beam.

(1) When the cabinet has been removed, the power is turned on without a compact disc, and the Pickup is on a position outer than the lead-in position, the Laser will light for several seconds to detect a disc. Do not look into the Pickup Lens.
(2) The Laser Power Output of the Pickup inside the unit and replacement service parts have already been adjusted prior to shipping.
(3) No adjustment to the Laser Power should be attempted when replacing or servicing the Pickup.
(4) Under no circumstances look directly into the Pickup Lens at any time.
(5) CAUTION - Use of controls or adjustments, or performance of procedures other than those specified herein may result in hazardous radiation exposure.

(For U.K.)

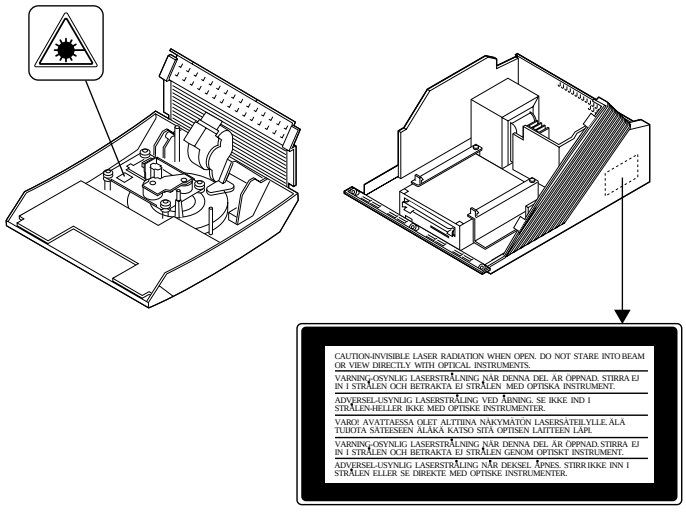


(Except for U.K.)



LASER KLASSE 1
LUOKAN 1 LASERLAITE
KLASS 1 LASERAPPARAT
LASER TŘÍDY 1
LASER TRIEDY 1

Laser Diode Properties
Material: GaAlAs
Wavelength: 780 nm
Emission Duration: continuous
Laser Output: max. 0.6 mW


CAUTION-INVISIBLE LASER RADIATION WHEN OPEN. DO NOT STARE INTO BEAM OR VIEW DIRECTLY WITH OPTICAL INSTRUMENTS.
VARNING-OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD. STIRRA EJ IN I STRÅLEN OCH BETRAKTA EJ STRÅLEN MED OPTISKA INSTRUMENT.
ADVERSEL-USYNLIG LASERSTRÅLING VED ÅBNING, SE IKKE IND I STRÅLEN-HELLER IKKE MED OPTISKE INSTRUMENTER.
VARO! AVATTAESSA OLET ALTTIINA NÄKYMÄTÖN LASERSÄTEILYLLE. ÄLÄ TUIJOTA SÄTEESEEN ÄLÄKÄ KATSO SITÄ OPTISEN LAITTEEN LÄPI.
VARNING-OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD.STIRRA EJ IN I STRÅLEN OCH BETRAKTA EJ STRÅLEN GENOM OPTISKT INSTRUMENT.
ADVERSEL-USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES. STIRR IKKE INN I STRÅLEN ELLER SE DIREKTE MED OPTISKE INSTRUMENTER.

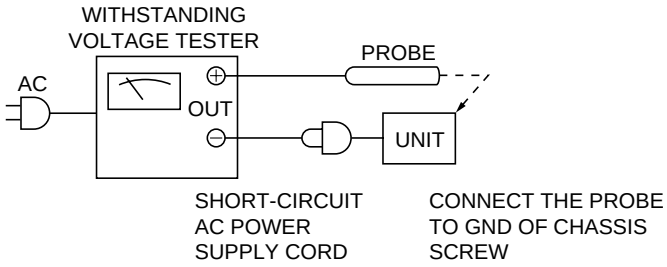
VAROITUS! LAITTEEN KÄYTTÄMINEN MUULLA KUIN TÄSSÄ KÄYTTÖOHJEESSA MAINITULLA TAVALLA SAATTAA ALTISTAA KÄYTTÄJÄN TURVALLISUUSLUOKAN 1 YLITTÄVÄLLE NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE.

VARNING - OM APPARATEN ANVÄNDS PÅ ANNAT SÄTT ÄN I DENNA BRUKSANVISNING SPECIFICERAS. KAN ANVÄNDAREN UTSÄTTAS FÖR OSYNLIG LASERSTRÅLNING, SOM ÖVERSKRIDER GRÄNSEN FÖR LASERKLASS 1.

IMPORTANT SERVICE NOTES (FOR U.K. ONLY)

Before returning the unit to the customer after completion of a repair or adjustment it is necessary for the following withstand voltage test to be applied to ensure the unit is safe for the customer to use.
Setting of Withstanding Voltage Tester and set.

Set name	set value
Withstanding Voltage Tester	
Test voltage	4,240 VPEAK 3,000 VRMS
Set time	6 secs
Set current (Cutoff current)	4 mA
Unit	
Judgment	
OK: The “GOOD” lamp lights. NG: The “NG” lamp lights and the buzzer sounds.	



FOR A COMPLETE DESCRIPTION OF THE OPERATION OF THIS UNIT, PLEASE REFER TO THE OPERATION MANUAL.

SPECIFICATIONS

MD-E9000H

■ General

Power source	AC 230 V, 50 Hz
Power consumption	Power on: 50 W Power stand-by: 0.6 W (*)
Dimensions	Width: 230 mm (9-1/16") Height: 173 mm (6-13/16") Depth: 290 mm (11-7/16")
Weight	4.1 kg (9.0 lbs.)

(*) This power consumption value is obtained when the demonstration mode is cancelled in the power stand-by mode. To cancel the demonstration mode.

■ Amplifier (For U.K.)

Output power	MPO: 66 W (33 W + 33 W) (10 % T. H. D.) RMS: 40 W (20 W + 20 W) (10 % T. H. D.) RMS: 28 W (14 W + 14 W) (1kHz 0.9 % T. H. D.)
Output terminals	Speakers: 4 ohms Headphones: 16 - 50 ohms (recommended: 32 ohms)
Input terminals	Auxiliary: 500 mV/47 kohms

■ Amplifier (Except for U.K.)

Output power	PMPO: 132 W (Total) MPO: 66 W (33 W + 33 W) (DIN 45 324) RMS: 40 W (20 W + 20 W) (DIN 45 324) RMS: 28 W (14 W + 14 W) (DIN 45 500)
Output terminals	Speakers: 4 ohms Headphones: 16 - 50 ohms (recommended: 32 ohms)
Input terminals	Auxiliary: 500 mV/47 kohms

■ CD player

Type	Compact disc player
Signal readout	Non-contact, 3-beam semiconductor laser pickup
D/A converter	1-bit D/A converter
Frequency response	20 - 20,000 Hz
Dynamic range	90 dB (1 kHz)

■ MiniDisc

Type	MiniDisc recorder
Signal readout	Non-contact, 3-beam semiconductor laser pickup
Rotation speed	400 - 900 rpm CLV, Approx.
Error correction	ACIRC (Advanced Cross Interleave Reed-Solomon Code)
Quantization	20-bit linear (A/D converter)
Coding	ATRAC/ATRAC 3 (Adaptive TRansform Acoustic Coding)
Sampling frequency	44.1 kHz
Recording method	Magnetic modulation overwrite method
Frequency response	20 - 20,000 Hz
D/A converter	1-bit D/A converter
Wow and flutter	Unmeasurable (less than 0.001% W. peak)
Signal/noise ratio	95 dB (1 kHz)
Dynamic range	90 dB (1 kHz)
Audio channel	Stereo: 2 channels (SP, LP2, LP4)

■ Tuner

Frequency range	FM: 87.5 - 108 MHz AM: 522 - 1,620 kHz

CP-E9000H

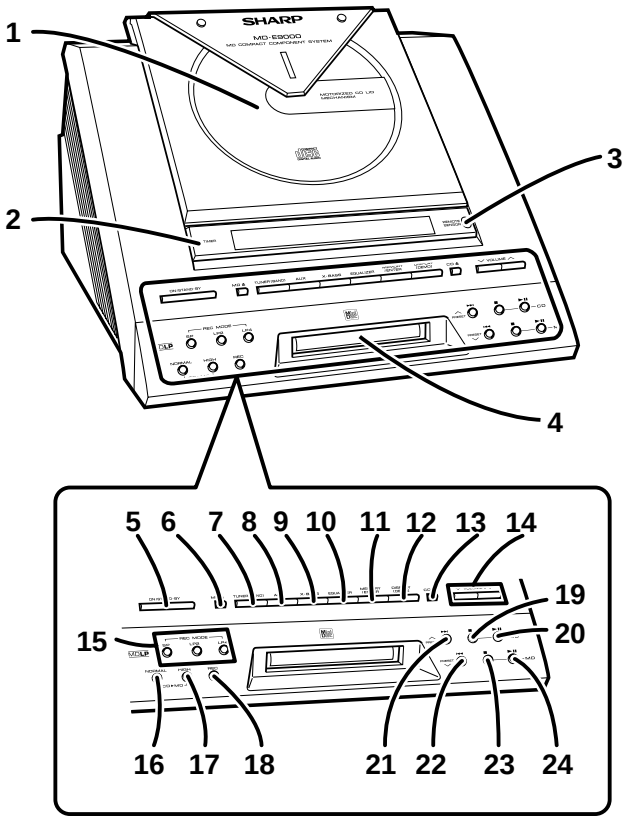
Type	2-way type speaker system 5 cm (2") Tweeter 10 cm (4") Woofer
Maximum input power	40 W
Rated input power	20 W
Impedance	4 ohms
Dimensions	Width: 140 mm (5-9/16") Height: 300 mm (11-13/16") Depth: 187 mm (7-3/8")
Weight	1.5 kg (3.3 lbs.)/each

Specifications for this model are subject to change without prior notice.

NAMES OF PARTS

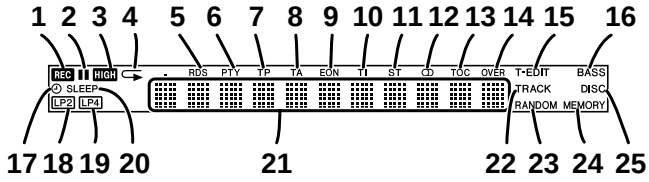
MD-E9000H

■ Front panel



1. CD Compartment
2. Timer Set Indicator
3. Remote Sensor
4. MD Compartment
5. On/Stand-by Button
6. MD Eject Button
7. Tuner (Band) Button
8. Auxiliary Button
9. Extra Bass Button
10. Equalizer Button
11. Memory/Enter Button
12. Display (Demo) Button
13. CD Open/Close Button
14. Volume Up and Down Buttons
15. MD Record Mode Selector Buttons (SP/LP2/LP4)
16. CD/MD Normal Speed Record Button
17. CD/MD High Speed Record Button
18. MD Record Button
19. CD Stop Button
20. CD Play or Pause Button
21. CD/MD Track Up and Fast Forward, Tuner Preset Up Button
22. CD/MD Track Down and Fast Reverse, Tuner Preset Down Button
23. MD Stop Button
24. MD Play or Pause Button

■ Display

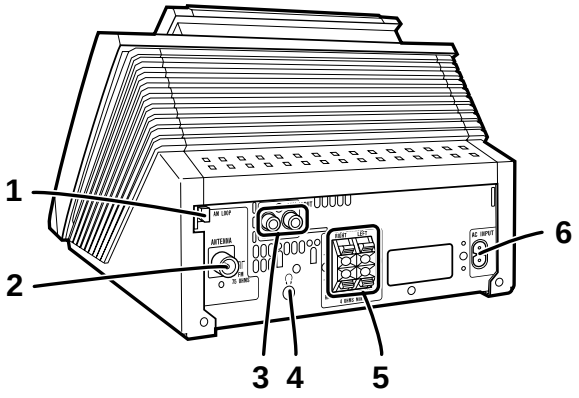


1. Record Indicator
2. Record Pause Indicator
3. High Speed Record Indicator
4. CD/MD Repeat Indicator
5. RDS Indicator
6. Programme Type Indicator
7. Traffic Programme Indicator
8. Traffic Announcement Indicator
9. EON Indicator
10. Traffic Information Indicator
11. FM Stereo Mode Indicator
12. FM Stereo Receiving Indicator
13. TOC Indicator
14. Over Indicator
15. Track Edit Indicator
16. Extra Bass Indicator
17. Timer Play/Record Indicator
18. 2 times Long Recording (stereo) Indicator
19. 4 times Long Recording (stereo) Indicator
20. Sleep Indicator
21. Level Meter/Character Information/Frequency Indicator
22. Track Indicator
23. Random Play Indicator
24. Memory Indicator
25. Disc Indicator

MD-E9000H

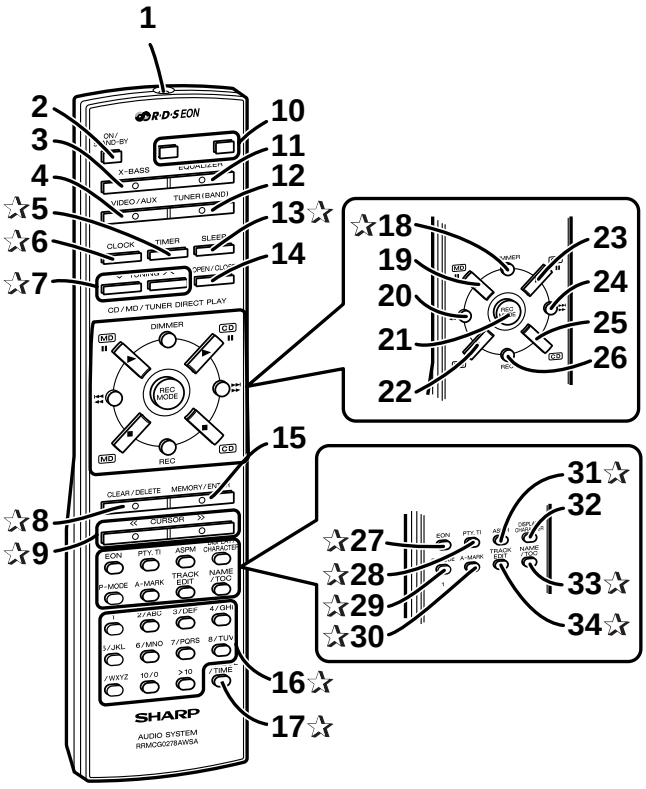
■ Rear Panel

1. AM Loop Aerial Socket
2. FM 75 Ohms Aerial Socket
3. Auxiliary (Audio Signal) Input Sockets
4. Headphone Socket
5. Speaker Terminals
6. AC Power Input Socket



■ Remote Control

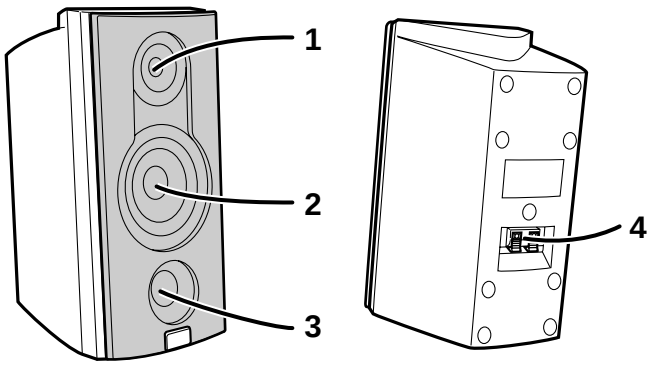
1. Remote Control Transmitter
2. On/Stand-by Button
3. Extra Bass Button
4. Video/Auxiliary Button
5. Timer Button
6. Clock Button
7. Tuning Up and Down Buttons
8. Clear/Delete Button
9. Cursor Buttons
10. Volume Up and Down Buttons
11. Equalizer Mode Selector Button
12. Tuner (Band) Button
13. Sleep Button
14. CD Open/Close Button
15. Memory/Enter Button
16. Character Input/CD, MD Direct Buttons
17. Symbol/Time Button
18. Dimmer Button
19. MD Play or Pause Button
20. CD/MD Fast Reverse, Track Down Button
21. Recording Mode Selector Button
22. MD Stop Button
23. CD Play or Pause Button
24. CD/MD Fast Forward, Track Up Button
25. CD Stop Button
26. MD Record Button
27. RDS EON Button
28. RDS Programme Type/Traffic Information Search Button
29. CD/MD Play Mode Selector Button
30. Auto Marker Button
31. RDS ASPM (Auto Station Programme Memory) Button
32. Display/Character Button
33. Name/TOC Button
34. Track Edit Button



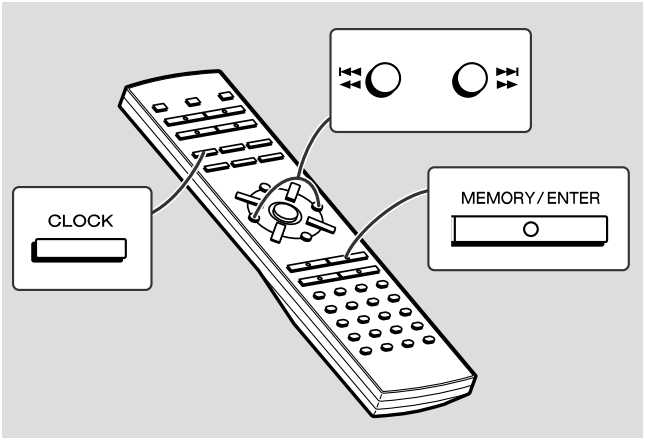
Buttons with "☆" mark in the illustration can be operated on the remote control only.
Other buttons can be operated both on the main unit and the remote control.

CP-E9000H

1. Tweeter
2. Woofer
3. Bass Reflex Duct
4. Speaker Terminals



Setting the Clock



This may be operated only with the remote control.
In this example, the clock is set for the 24-hour (0:00) display.

1 Press the CLOCK button and within 10 seconds, press the MEMORY/ENTER button.

-CLOCK- ⇨ -0:00-

2 Press the ⏮/◀◀ or ▶▶/⏭ button to select 24-hour or 12-hour display and then press the MEMORY/ENTER button.

"0:00" → The 24-hour display will appear. (0:00 - 23:59)
"AM 0:00" → The 12-hour display will appear. (AM 0:00 - PM 11:59)
"AM 12:00" → The 12-hour display will appear. (AM 12:00 - PM 11:59)

3 Press the ⏮/◀◀ or ▶▶/⏭ button to adjust the hour and then press the MEMORY/ENTER button.

-10:00 ⇨ 10:00-

- When the 12-hour display is selected, "AM" will change automatically to "PM".

4 Press the ⏮/◀◀ or ▶▶/⏭ button to adjust the minutes and then press the MEMORY/ENTER button.

10:30- ⇨ 10:30

- The hour will not advance even if minutes advance from "59" to "00".
- The clock starts from "0" second. (Seconds are not displayed.)

To check the time:
Press the CLOCK button.
The time display will appear for about 10 seconds.

Note:
The "CLOCK" or time will flash at the push of the CLOCK button when the AC power supply is restored after a power failure or unplugging the unit.
Readjust the clock by performing "Setting the Clock" from the beginning.

Error Messages

When an error message is displayed, proceed as follows:

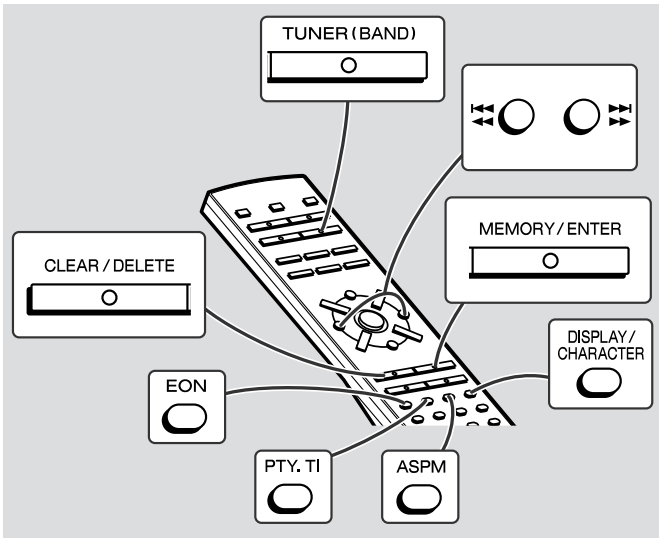
Error messages	Meaning	Remedy
BLANK MD	● Nothing is recorded. (Neither music nor disc name is recorded.)	● Replace it with another disc.
Can't COPY	● You tried to record from a copy prohibited CD.	● Replace the CD.
Can't EDIT	● A track cannot be edited.	● Change the stop position of the track and then try editing it.
Can't READ ✳ (✳:Number or symbol)	● The disc is damaged. ● TOC information cannot be read. ● MiniDisc not specified.	● Replace it with another disc. ● Erase the disc and try recording again.
Can't REC	● Recording cannot be performed correctly due to vibration or shock in the unit.	● Re-record or replace the MiniDisc.
Can't WRITE	● The TOC information could not be created properly due to a mechanical shock or to scratches on the disc.	● Set this unit to the stand-by mode and try to write the TOC again. (Remove any source of shock or vibration whilst writing.)
DISC FULL	● The disc is out of recording space.	● Replace the disc with another recordable disc.
Er-CD 20	● The CD cover is not working properly.	● Set this unit to the stand-by mode and turn the power on again.
Er-MD ✳✳ (✳:Number or symbol)	● A MiniDisc is not working properly.	● Set this unit to the stand-by mode and turn the power on again.
EDIT OVER	● You chose 21 or more tracks for track editing. ● The remaining time available for recording is short.	● Decrease the number of tracks. ● Replace it with a disc that has enough time to record.
MD NO DISC CD NO DISC	● A MiniDisc has not been loaded. ● The MiniDisc data cannot be read. ● A CD has not been loaded. ● The CD data cannot be read.	● Load a MiniDisc. ● Reload the MiniDisc. ● Load a CD. ● Reload the CD.

Error messages	Meaning	Remedy
NAME FULL	● The number of characters for the disc name or track name exceeds 40.	● Shorten the disc or track name.
NOT AUDIO	● The data recorded on this disc is not audio data.	● Select another track. ● Replace the disc.
PLAYBACK MD	● You tried to record on a playback-only disc.	● Replace it with another recordable disc.
PROTECTED	● The disc is write protected.	● Move the write protection tab back to its original position.
TEMP OVER	● The temperature is too high.	● Set this unit to the stand-by mode and wait for a whilst.
TOC FORM ✳✳ (✳:Number or symbol)	● TOC information recorded on the MD does not match the MiniDisc specifications or it cannot be read.	● Replace it with another disc. ● Erase the disc and try recording again.
TOC FULL	● There is no space left for recording track numbers.	● Replace it with another recordable disc.
TOC FULL1	● There is no space left for recording character information.	● Replace it with another recordable disc. ● Erase the needless characters.
? MD DISC	● The data contains an error. ● MiniDisc not specified.	● Replace it with another disc.
POWER?	● MiniDisc is not working properly.	● Set this unit to the stand-by mode and turn the power on again.
ER-TU ✳✳ (✳:Number or symbol)	● Tuner is not working properly.	● Set the unit to the stand-by mode and turn the power on again.

Using the Radio Data System (RDS)

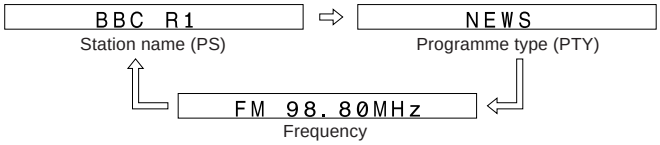
RDS is a broadcasting service which a growing number of FM stations provide. These FM stations send additional signals along with their regular programme signals. They send their station names, and information about the type of programme such as sports or music, etc.
When tuned to an RDS station, “RDS” and the station name will be displayed.
“TP” (Traffic Programme) will appear on the display when the received broadcast carries traffic information, and “TA” (Traffic Announcement) will appear whilst a traffic information is on air.
“EON” will appear whilst the EON (Enhanced Other Networks information) data is broadcast.

You can control the RDS by using the remote control only.

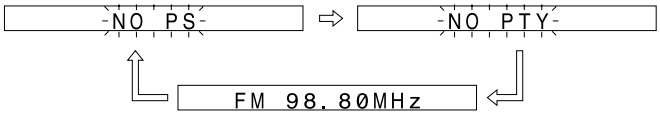


■ Information provided by RDS

Each time the DISPLAY/CHARACTER button is pressed, the display will switch as follows:



When you are tuning in to a station other than an RDS station or to an RDS station which sends weak signal, the display will change in the following order:



Descriptions of the PTY (Programme Type) codes, TP (Traffic Programme) and TA (Traffic Announcement)
You can search for and receive the following PTY, TP and TA signals.

NEWS	Short accounts of facts, events and publicly expressed views, reportage and actuality.
AFFAIRS	Topical programme expanding or enlarging upon the news, generally in different presentation style or concept, including debate, or analysis.
INFO	Programmes whose purpose is to impart advice in the widest sense.
SPORT	Programme concerned with any aspect of sport.
EDUCATE	Programme intended primarily to educate, of which the formal element is fundamental.
DRAMA	All radio plays and serials.
CULTURE	Programmes concerned with any aspect of national or regional culture, including language, theatre, etc.
SCIENCE	Programmes about the natural sciences and technology.
VARIED	Used for mainly speech-based programmes usually of light-entertainment nature, not covered by other categories. Examples include: quizzes, panel games, personality interviews.
POP M	Commercial music, which would generally be considered to be of current popular appeal, often featuring in current or recent record sales charts.
ROCK M	Contemporary modern music, usually written and performed by young musicians.
EASY M	Current contemporary music considered to be “easy-listening”, as opposed to Pop, Rock or Classical, or one of the specialised music styles, Jazz, Folk or Country. Music in this category is often but not always vocal, and usually of short duration.
LIGHT M	Classical music for general, rather than specialist appreciation. Examples of music in this category are instrumental music, and vocal or choral works.
CLASSICS	Performances of major orchestral works, symphonies, chamber music, etc., and including Grand Opera.
OTHER M	Musical styles not fitting into any of the other categories. Particularly used for specialist music of which Rhythm & Blues and Reggae are examples.
WEATHER	Weather reports and forecasts and meteorological information.
FINANCE	Stock Market reports, commerce, trading, etc.
CHILDREN	For programmes targeted at a young audience, primarily for entertainment and interest, rather than where the objective is to educate.
SOCIAL	Programmes about people and things that influence them individually or in groups. Includes: sociology, history, geography, psychology and society.
RELIGION	Any aspect of beliefs and faiths, involving a God or Gods, the nature of existence and ethics.
PHONE IN	Involving members of the public expressing their views either by phone or at a public forum.
TRAVEL	Features and programmes concerned with travel to near and far destinations, package tours and travel ideas and opportunities. Not for use for announcements about problems, delays, or roadworks affecting immediate travel where TP/TA should be used.
LEISURE	Programmes concerned with recreational activities in which the listener might participate. Examples include, Gardening, Fishing, Antique collecting, Cooking, Food & Wine, etc.
JAZZ	Polyphonic, syncopated music characterised by improvisation.
COUNTRY	Songs which originate from, or continue the musical tradition of the American Southern States. Characterised by a straightforward melody and narrative story line.
NATION M	Current Popular Music of the Nation or Region in that country's language, as opposed to International 'Pop' which is usually US or UK inspired and in English.
OLDIES	Music from the so-called “golden age” of popular music.
FOLK M	Music which has its roots in the musical culture of a particular nation, usually played on acoustic instruments. The narrative or story may be based on historical events of the people.
DOCUMENT	Programme concerned with factual matters, presented in an investigative style.
TEST	Broadcast when testing emergency broadcast equipment or receivers.
ALARM !	Emergency announcement made under exceptional circumstances to give warning of events causing danger of general nature.
NONE	No programme type (receive only).
TP	Broadcasts which carry traffic announcements.
TA	Traffic announcements are being broadcast.

Note:
When you select a programme in the EON stand-by mode, the unit will display “TI” instead of “TA”.

Troubleshooting Chart

Many potential “problems” can be resolved by the owner without calling a service technician. If something is wrong with this product, check the following before calling your authorised SHARP dealer or service centre.

■ General

Symptom	Possible cause
● The clock is not on time.	● Did a power failure occur? Reset the clock.
● When a button is pressed, the unit does not respond.	● Set this unit to the power stand-by mode and then turn it back on. ● Does the unit still malfunction? Reset it.
● No sound is heard from the speakers.	● Is the volume level set to “0”? ● Are the headphones connected? ● Are the speaker wires disconnected?

■ CD player

Symptom	Possible cause
● Playback does not start. ● Playback stops in the middle or is not performed properly.	● Is the disc loaded upside down? ● Does the disc dissatisfy the standards? ● Is the disc distorted or scratched?
● Playback sounds are skipped, or stopped in the middle of a track.	● Is the unit located near excessive vibration? ● Is the disc very dirty? ● Has condensation formed inside the unit?

■ MiniDisc

Symptom	Possible cause
● A recording cannot be made.	● Is the MiniDisc protected against accidental erasure? ● Did you try to make recording on a playback-only MiniDisc? ● Can you see the "DISC FULL" or "TOC FULL" message in the display?
● Even though a disc has been loaded, “CD/MD NO DISC” or “Can’t READ” is displayed. ● Playback sounds are skipped.	● Is the unit located near excessive vibration? ● Is the disc very dirty? ● Has condensation formed inside the unit?

■ Tuner

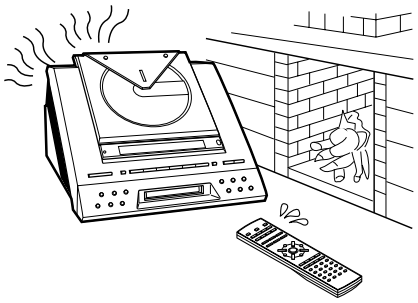
Symptom	Possible cause
● Radio makes unusual noise consecutively.	● Is the stereo system placed near the TV or computer? ● Is the AC power lead located near the aerial?

■ Remote control

Symptom	Possible cause
● The remote control does not operate.	● Is the stereo system unplugged? ● Is the battery polarity incorrect? ● Are batteries dead? ● Is the distance or angle incorrect? ● Does the remote control sensor receive strong light?

■ Condensation

Sudden temperature changes, storage or operation in an extremely humid environment may cause condensation inside the cabinet (CD/MD pickup, etc.) or on the transmitter on the remote control.
Condensation can cause the unit to malfunction.
If this happens, leave the power on with no disc in the unit until normal playback is possible (about 1 hour). Wipe off any condensation on the transmitter with a soft cloth before operating the unit.



Troubleshooting Chart

■ If trouble occurs

When this product is subjected to strong external interference (mechanical shock, excessive static electricity, abnormal supply voltage due to lightning, etc.) or if it is operated incorrectly, it may malfunction.

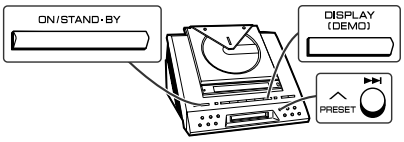
If such a problem occurs, do the following:

1. Set the unit to the stand-by mode and turn the power on again.
2. If the unit is not restored in step 1, unplug and plug in the unit, and then turn the power on.

Note:
If neither operation above restores the unit, clear all the memory by resetting it.

■ Clearing all the memory (reset)

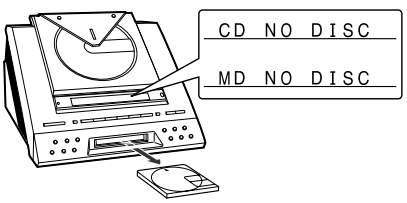
1. Press the ON/STAND-BY button to enter the power stand-by mode.
2. Whilst pressing down the PRESET ∧ button and the DISPLAY (DEMO) button, press the ON/STAND-BY button.
   After the “RESET” is displayed for about 1 second, the unit will enter the power stand-by mode.



Caution:
This operation will erase all data stored in memory including clock, timer settings, tuner preset, and CD or MiniDisc programme.

■ Before transporting the unit

Remove the CD and the MiniDisc from the unit. Your unit checks whether there is a disc inside the unit when the compartment is closed. “NO DISC” appears if no disc is left. Then, set the unit to the power stand-by mode. Carrying the unit with discs left inside can damage it.

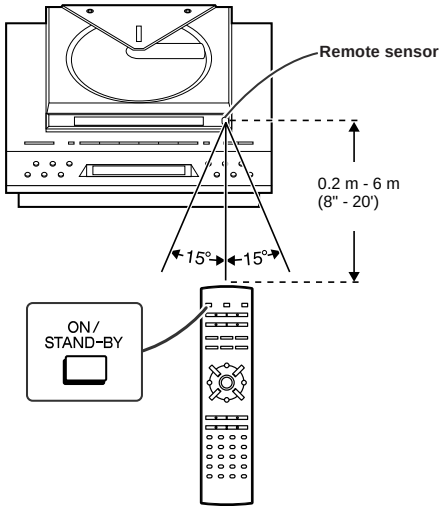


Remote Control

■ Test of the remote control

Face the remote control directly to the remote sensor on the unit.

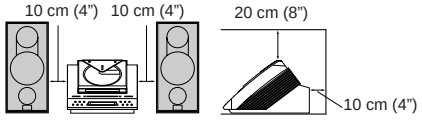
The remote control can be used within the range shown below:
Press the ON/STAND-BY button. Does the power turn on? Now, you can enjoy the music.



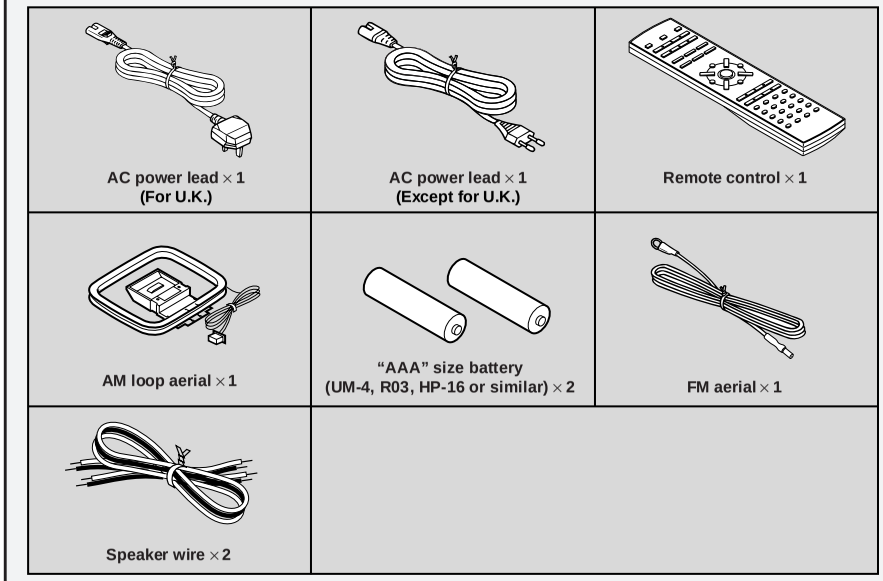
Precautions

■ Placing the system

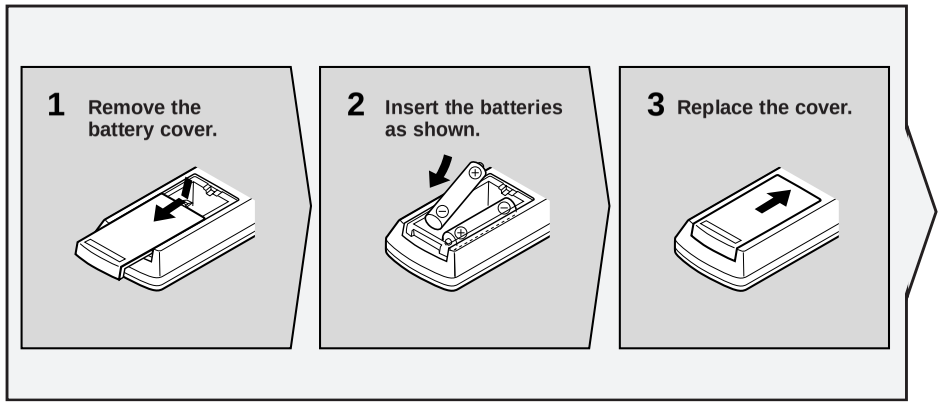
● Please ensure that the equipment is positioned in a well-ventilated area and that there is at least 10 cm (4") of free space along the sides and back.
There must also be a minimum of 20 cm (8") of free space on the top of the unit.



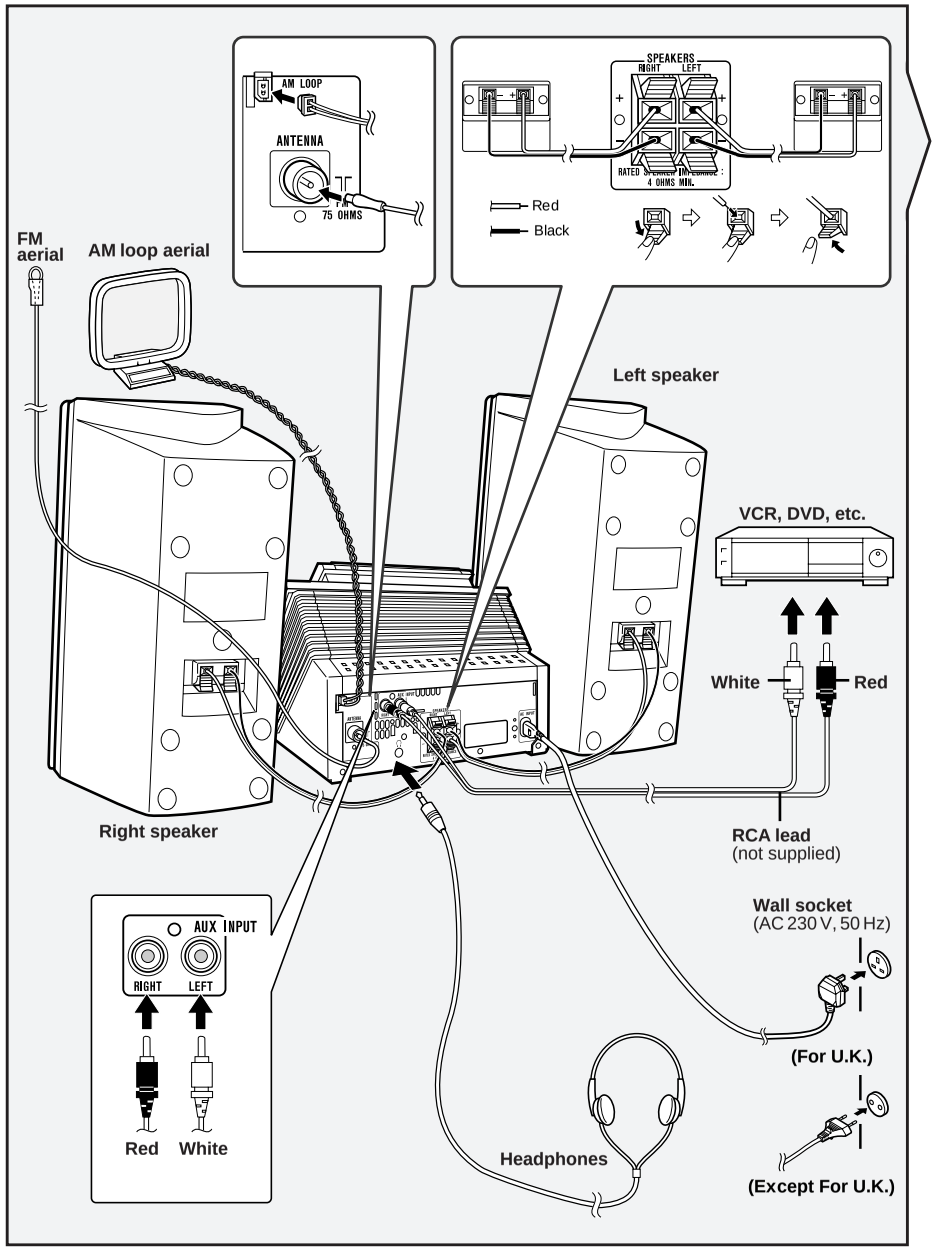
1 Accessories


AC power lead × 1
(For U.K.)
AC power lead × 1
(Except for U.K.)
Remote control × 1
AM loop aerial × 1
"AAA" size battery
(UM-4, R03, HP-16 or similar) × 2
FM aerial × 1
Speaker wire × 2

2 Battery installation of remote control



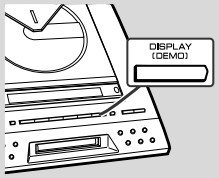
3 System Connections



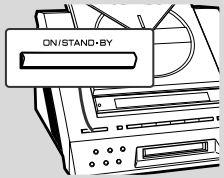
4 Turn on your system

The first time the unit is plugged, the unit will enter the demonstration mode. You will see words scroll.

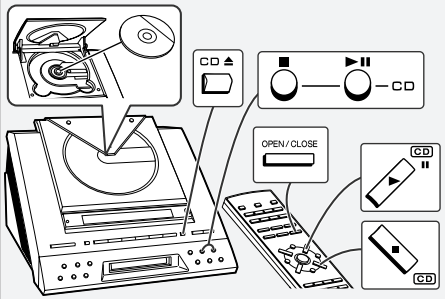
1 Press the DISPLAY (DEMO) button to cancel the demonstration mode.



2 Press the ON/STAND-BY button to turn the power on.



Listening to a CD



1 Press the CD ■ button.

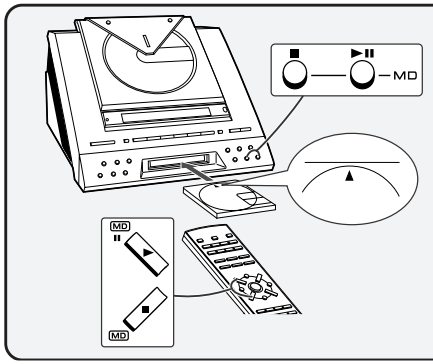
2 Press the CD ≜ (OPEN/CLOSE) button to open the CD compartment.

3 Place a CD on the spindle, label side up.

4 Press the CD ≜ (OPEN/CLOSE) button to close the CD compartment.

5 Press the CD ►II (►) button to start playback.

Listening to a MiniDisc

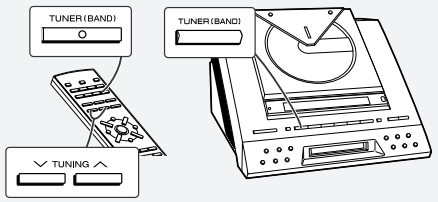


1 Press the MD ■ button.

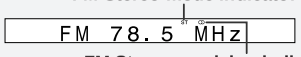
2 Load a MiniDisc into the MD compartment, label side up.

3 Press the MD ►II (►) button to start playback.

Listening to the Radio



FM Stereo mode indicator



FM Stereo receiving indicator

1 Press the TUNER (BAND) button until “FM” or “ AM” appears on the display.

2 Press the TUNING (﹀ or ﹀) button on the remote control to tune in to the desired station.

Manual tuning:
Press the TUNING button as many times as required to tune in to the desired station.

Auto tuning:
When the TUNING button is pressed for more than 0.5 seconds, scanning will start automatically and the tuner will stop at the first receivable broadcast station.

To receive an FM stereo transmission:
Press the TUNER (BAND) button to display “ST”.
● “ ” will appear when an FM broadcast is in stereo.

■ If trouble occurs

When this product is subjected to strong external interference (mechanical shock, excessive static electricity, abnormal supply voltage due to lightning, etc.) or if it is operated incorrectly, it may malfunction.

If such a problem occurs, do the following:

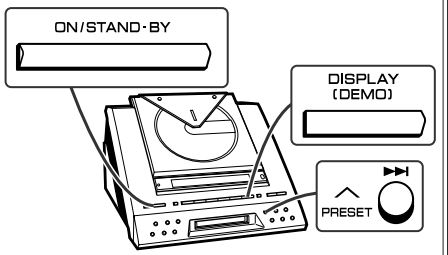
1. Set the unit to the stand-by mode and turn the power on again.
2. If the unit is not restored in step 1, unplug and plug in the unit, and then turn the power on.

Note:
If neither operation above restores the unit, clear all the memory by resetting it.

■ Clearing all the memory (reset)

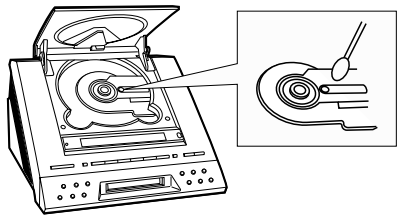
1. Press the ON/STAND-BY button to enter the power stand-by mode.
2. Whilst pressing down the PRESET ﹀ button and the DISPLAY (DEMO) button, press the ON/STAND-BY button.
   After the “RESET” is displayed for about 1 second, the power will be turned off.

Caution:
This operation will erase all data stored in memory including clock, timer settings, tuner preset, and CD or MiniDisc programme.



■ Maintenance

● Cleaning the CD pickup lens
Do not touch the laser pickup lens. If fingerprints or dust accumulate on the pickup, clean it gently with a dry cotton swab.



DISASSEMBLY

Caution on Disassembly

Follow the below-mentioned notes when disassembling the unit and reassembling it, to keep it safe and ensure excellent performance:

1. Take compact disc and minidisc out of the unit.
2. Be sure to remove the power supply plug from the wall outlet before starting to disassemble the unit.
3. Take off nylon bands or wire holders where they need to be removed when disassembling the unit. After servicing the unit, be sure to rearrange the leads where they were before disassembling.
   If the screw of the wrong length is applied on the MD mechanism unit (screw for mounting parts to the MD mechanism chassis), it may contact the optical pickup and cause the unit to malfunction.
4. Take sufficient care on static electricity of integrated circuits and other circuits when servicing.

MD-E9000H

STEP	REMOVAL	PROCEDURE	FIGURE
1	Side Panel	1. Screw ..... (A1) x6 2. Screw ..... (A2) x2	12-1
2	Top Cabinet with Rear Cabinet	1. Screw ..... (B1) x6 2. Flat Cable ..... (B2) x2 3. Socket ..... (B3) x2	12-1, 3 12-2
3	Rear Panel/Aux Input PWB with Fan Motor	1. Screw ..... (C1) x6 2. Socket ..... (C2) x2	12-2
4	Main PWB	1. Screw ..... (D1) x2 2. Flat Cable ..... (D2) x1 3. Socket ..... (D3) x3 4. Hook ..... (D4) x2	12-2
5	Tuner PWB	1. Screw ..... (E1) x3 2. Bracket ..... (E2) x1	12-3
6	Power Amp. PWB	1. Screw ..... (F1) x3 2. Socket ..... (F2) x1	12-3
7	MD Mechanism Unit	1. Screw ..... (G1) x3	12-3
8	CD Servo PWB (Note)	1. Screw ..... (H1) x3 2. Socket ..... (H2) x4	13-1
9	Display PWB	1. Screw ..... (J1) x10 2. Socket ..... (J2) x1	13-1
10	Rear Cabinet	1. Screw ..... (K1) x2	13-2
11	CD Lid Open/Close PWB with CD Lid Gear Unit Ass'y	1. Screw ..... (L1) x4 2. Cam Plate ..... (L2) x1 3. CD Lid Lever B .... (L3) x1	13-2
12	LED PWB	1. Screw ..... (M1) x1	13-2
13	CD Mechanism	1. Screw ..... (N1) x4	13-2
14	MD Mechanism/ MD Main PWB	1. Screw ..... (P1) x4 2. MD Mechanism Holder ..... (P2) x2 3. Screw ..... (P3) x8 4. Flat Cable ..... (P4) x1 5. Socket ..... (P5) x1 6. Flexible PWB ..... (P6) x1	13-3

Note:

After removing the connector for the optical pickup from the connector, wrap the conductive aluminium foil around the front end of connector remove to protect the optical pickup from electrostatic damage.

MD-E9000H

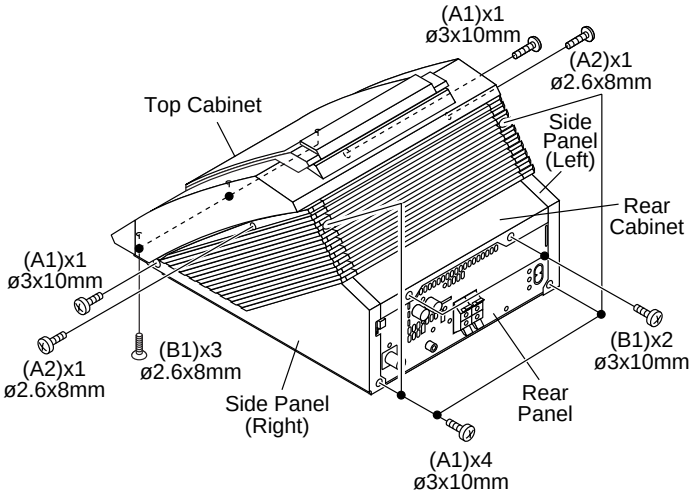


Figure 12-1

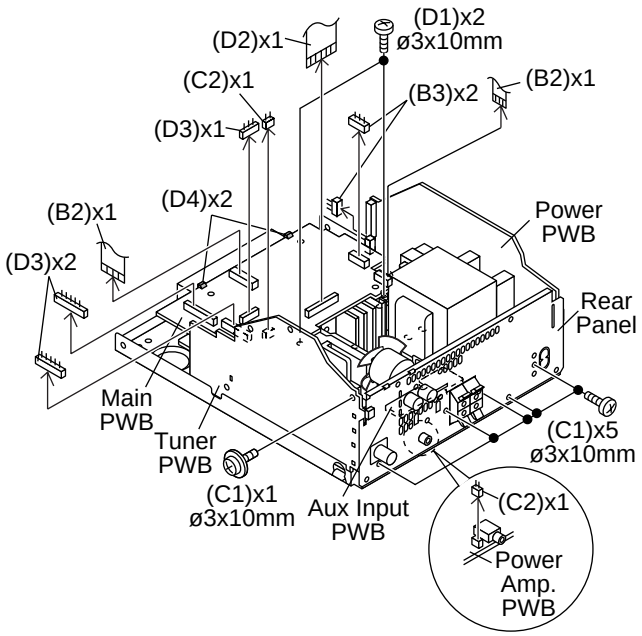


Figure 12-2

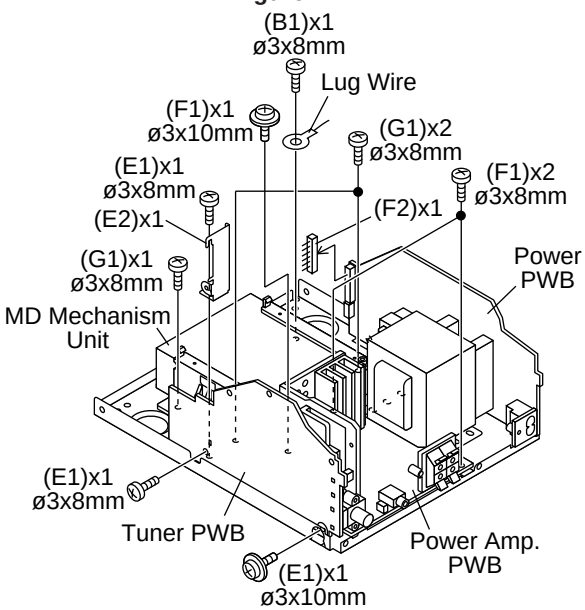


Figure 12-3

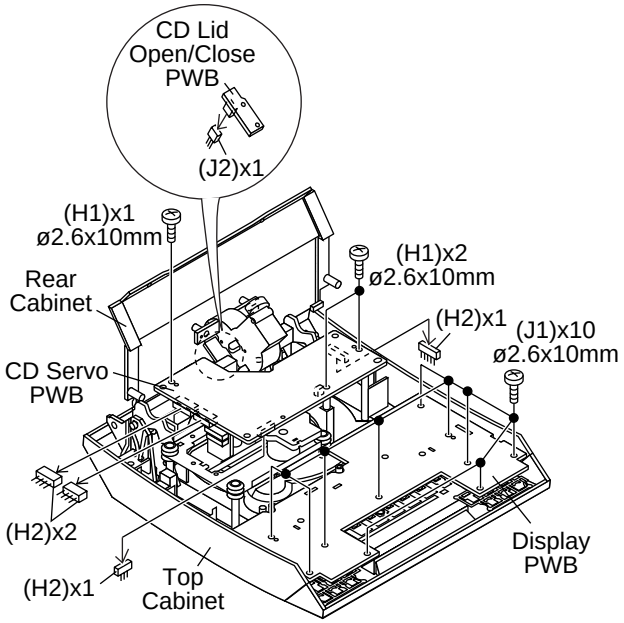


Figure 13-1

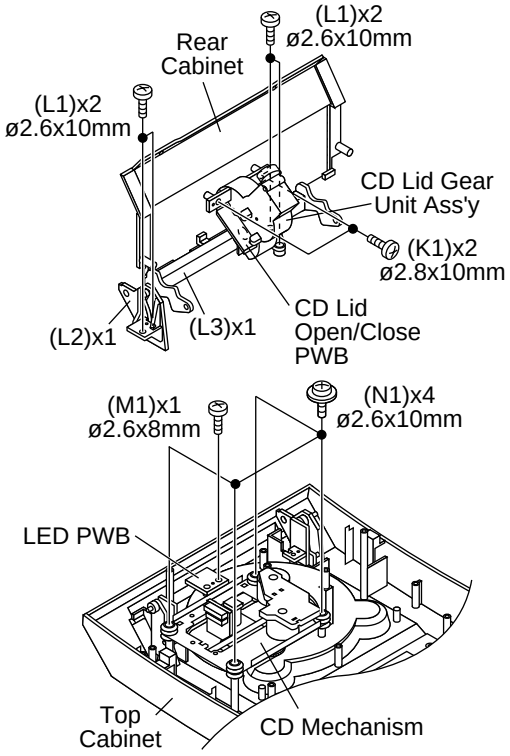
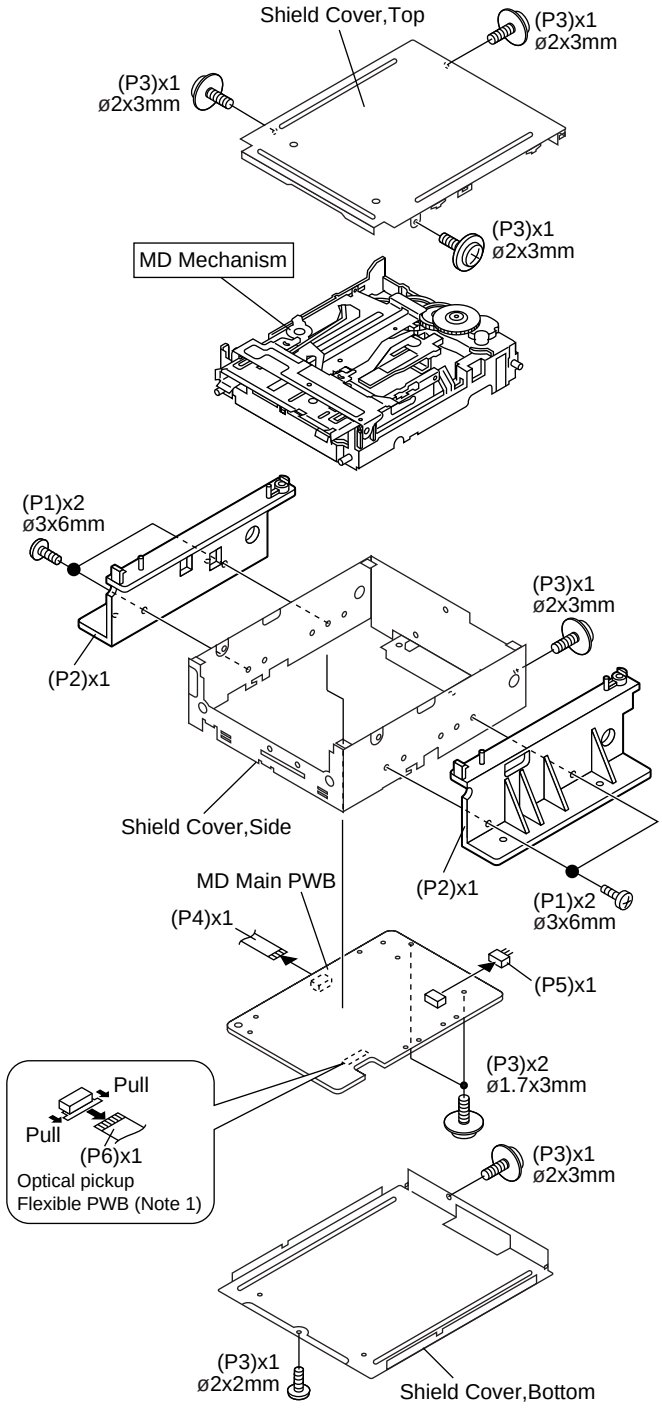


Figure 13-2



(Note 1)
After removing the flexible PWB for optical pickup from the connector wrap the front end of flexible PWB in conductive aluminum foil so as to protect the optical pickup from being damaged electrostatically.

Figure 13-3

MD-E9000H

CP-E9000H			
STEP	**REMOVAL**	**PROCEDURE**	**FIGURE**
1	Front Panel	1. Screw ..... (A1) x8 2. Tip ..... (A2) x4	14-1
2	Woofer	1. Screw ..... (B1) x4	14-2
3	Tweeter	1. Screw ..... (C1) x2	14-2

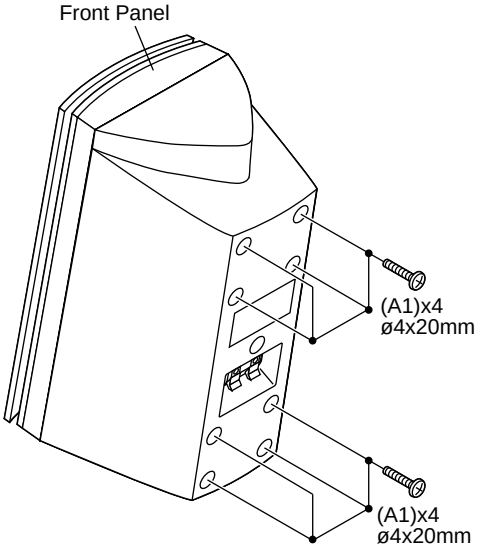


Figure 14-1

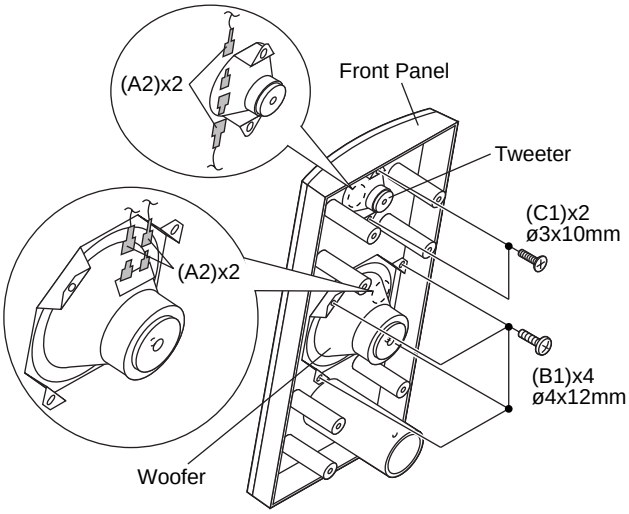


Figure 14-2

REMOVING AND REINSTALLING THE MAIN PARTS

MD MECHANISM SECTION

Perform steps 1 to 4, 7 and 14 of the disassembly method to remove the MD mechanism. (See page 12 and 13.)

Caution:
After pulling out the optical pickup connector, wrap the end of the connector in conductive aluminium foil to prevent the optical pickup from being destroyed by static electricity.

How to remove the magnetic head (See Fig. 15-1)

1. Remove the screw (A1) x 1 pc.

Caution:
Take utmost care so that the magnetic head is not damaged when it is mounted.

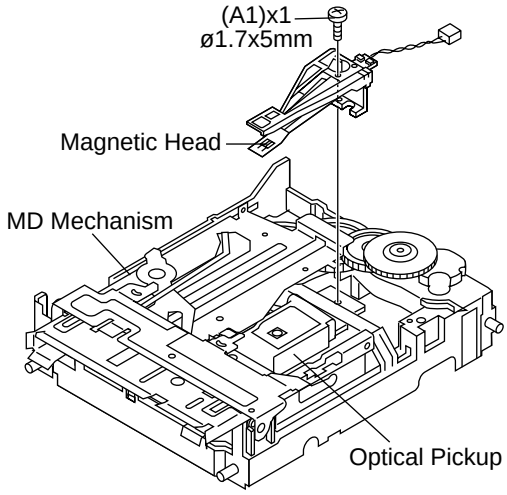


Figure 15-1

How to remove the MD loading motor PWB/MD loading motor (See Fig. 15-2)

1. Remove the screw (B1) x 1 pc.
2. Remove the Hooks (B2) x 3 pcs., and remove the MD loading PWB.
3. Remove the screws (B3) x 2 pcs., and remove the MD loading motor.

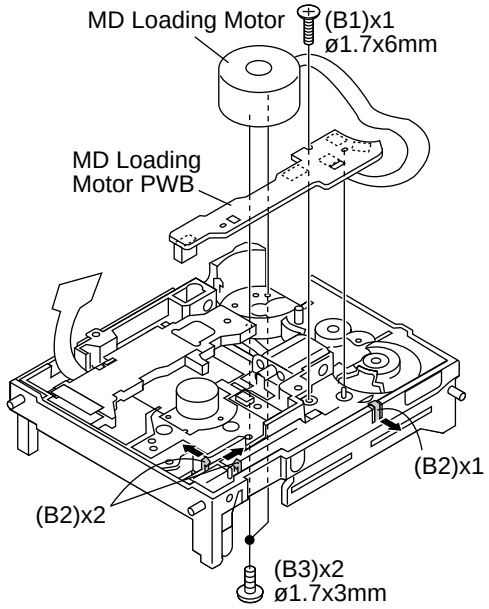


Figure 15-2

How to remove the MD sled motor/optical pickup (See Fig. 15-3)

1. Remove the screws (C1) x 3 pcs., and remove the MD sled motor.
2. Remove the optical pickup.

Caution:
Be careful so that the gear is not damaged.
(The damaged gear emits noise during searching.)

How to remove the MD spindle motor (See Fig. 15-4)

1. Remove the screws (D1) x 3 pcs., and remove the MD spindle motor.

Caution:
Be careful so that the gear is not damaged.
(The damaged gear emits noise during searching.)

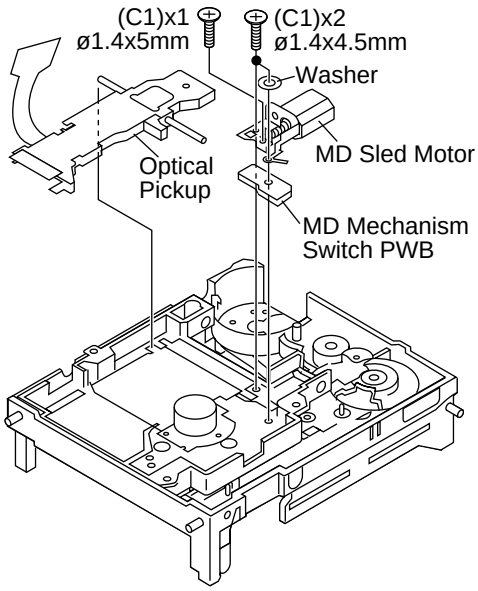


Figure 15-3

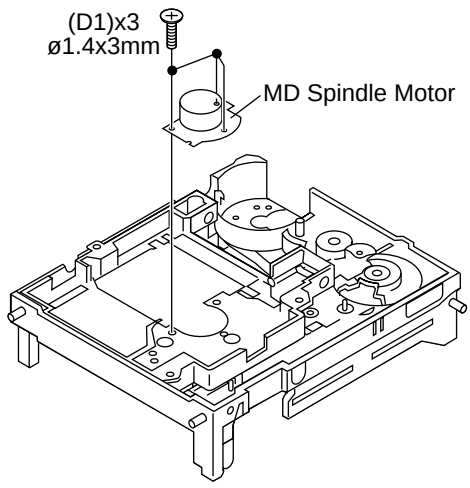


Figure 15-4

CD MECHANISM SECTION

Perform steps 1, 2, 8 and 13 of the disassembly method to remove the CD mechanism. (See page 12 and 13.)

How to remove the pickup (See Fig. 16-1)

1. Remove the CD mechanism cover, paying attention to the pawls (A1) x 4 pcs.
2. Remove the screws (A2) x 2 pcs., to remove the shaft (A3) x 1 pc.
3. Remove the stop washer (A4) x 1 pc., to remove the gear (A5) x 1 pc.
4. Remove the pickup.

Note:
After removing the connector for the optical pickup from the connector, wrap the conductive aluminium foil around the front end of connector remove to protect the optical pickup from electrostatic damage.

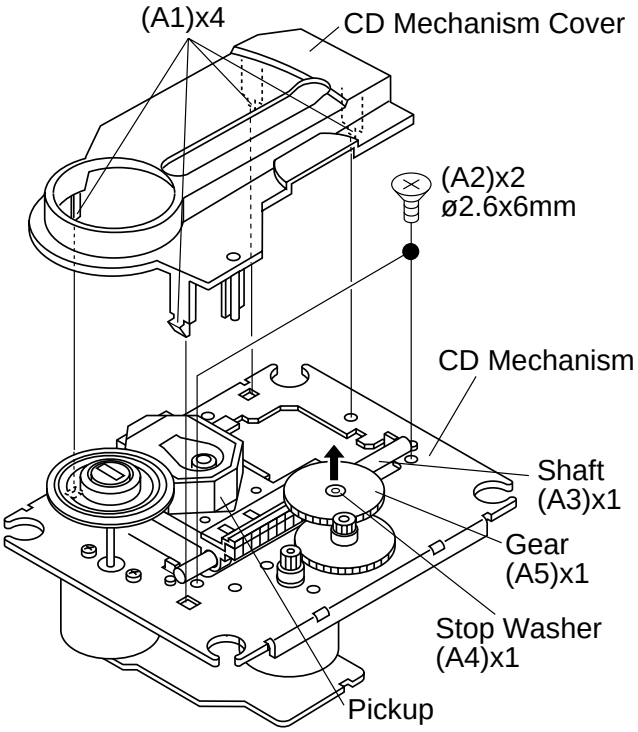


Figure 16-1

How to Remove the CD lid motor (See Fig. 16-2.)

1. Remove the top cabinet, CD lid open/close PWB and rear cabinet. (Refer to the disassembly method on page 13.)
2. Remove the screws (B1) x 2 pcs.
3. Remove the CD lid motor.

Caution:
Be careful not to damage the gear.
(If the gear is damaged, noise is heard when searching.)

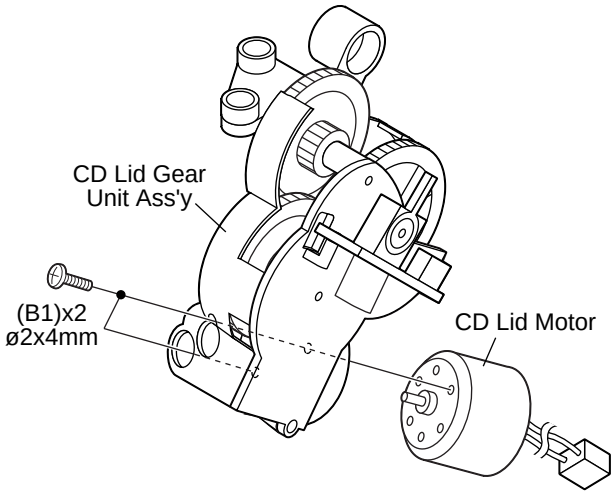


Figure 16-2

TEST MODE

From power off state to TEST mode

During power off, hold down CD OPEN/CLOSE button and PRESET UP button and then press ON/STAND-BY button.
It will show micom version display. "Y2K1 X.XX"
Press direct button to enter the test mode.

TEST MODE

TEST MODE	DIRECT KEY
CD	CD PLAY
MD DISPLAY	MD STOP
KEY	X-BASS
TUNER	TUNER
RDS TUN SM	DISPLAY

Cancelling the TEST mode

To cancel, press ON/STAND-BY button and it will display. "COMPLETE"

MD TEST mode

During power off, hold down EQUALIZER button and PRESET UP button and then press ON/STAND-BY button.

1. CD test

Outline: It is impossible to read setting value after automatic adjustment (Use for judgement a difference between initial value)
Pickup forcement operation
Move to inner, move to outer, LD ON/OFF

TEST mode entering method

Press CD PLAY button from TEST mode menu.

After enter to CD TEST mode

1) Direct power on at CD function
2) DSP initialize process
3) Transmit command correspond to button input

Validation Button: CD PLAY, CD STOP, SKIP UP, SKIP DOWN, ON/STAND-BY, DISPLAY, VOLUME UP, VOLUME DOWN

1. CD PLAY : STEP of CD operation
   STEP1: CD PLAY button from STOP condition , LD ON
   STEP2: CD PLAY button from STEP1, FOCUS ON
   STEP3: CD PLAY button from STEP2, CLV SERVO ON
   STEP4: CD PLAY button from STEP3, TRACKING SERVO ON
   STEP5: CD PLAY button from STEP4, SUB-CODE READING and DISPLAY
   * Direct to STEP5 if press CD PLAY button more than 1 sec
2. CD STOP : STOP from PLAY operation (STOP from each STEP)
   Return to NORMAL DISPLAY (PARAMETER DISPLAY)
3. SKIP UP : Force pickup to forward direction
4. SKIP DOWN : Force pickup to reverse direction
   Slide STOP after PICKUP IN switch ON
5. MD STOP : Access automatic adjustment (Present PICKUP point)
6. ON/STAND-BY : TEST mode cancel
7. DISPLAY : Read parameter register when CD STOP
8. VOLUME UP/DOWN : Normal volume control

Adjustment value reading

Read the following item every DISPLAY button input during stop.
Return to normal display if press CD STOP button.

Item	Display	RAM Address
Focus gain	_ _ F G : ××	0×5C h
Focus offset	F O F F : ××	0×9F h
Tracking balance	T B A L : ××	0×4D h
Tracking gain	_ _ T G : ××	0×5D h
Tracking offset	T O F F : ××	0×AF h
RF Levelshift	R F L S : ××	31××

Monitor setting value (××) when transmit command 31××

MD-E9000H

High (double) speed mode

It is possible to change between high speed/normal speed by pressing HIGH EDIT/NORMAL EDIT button during stop.
"HIGH" mark will light up when high speed mode.
Actual operation is just only sending 1 time/2 time speed operation command other is same with normal speed.
When change from high speed to normal speed, it will set normal speed parameter and RF amp.

3. MD test mode

a. Communication start after proceed MD reset process
b. Power ON at MD function
c. Transmit command correspond to each button during button input (min 5 transmission)
Display: Display all 10 characters which transmitting from text area by MD command
d. Eject and loading is same as normal operation
e. Change to MD non adjustment mode by ON/STAND-BY button
f. MD no adjustment mode is like procedure below
1) Transmit power off command (1F) to MD
2) Wait until function bit: 00 (POWER OFF) confirmation
3) MD micom reset
4) Transmit non automatic adjustment test mode command (D1) until change to MD mode (E0) after communication start
5) Display 1, 3, 5, 7 segment according to music calender data when MD mode E0
6) Normal operation for next step

Reference

To cancel non automatic adjustment mode, need to do either reset or power failure MD micom will start normal mode operation if not receive non adjustment mode command when recover from power failure.

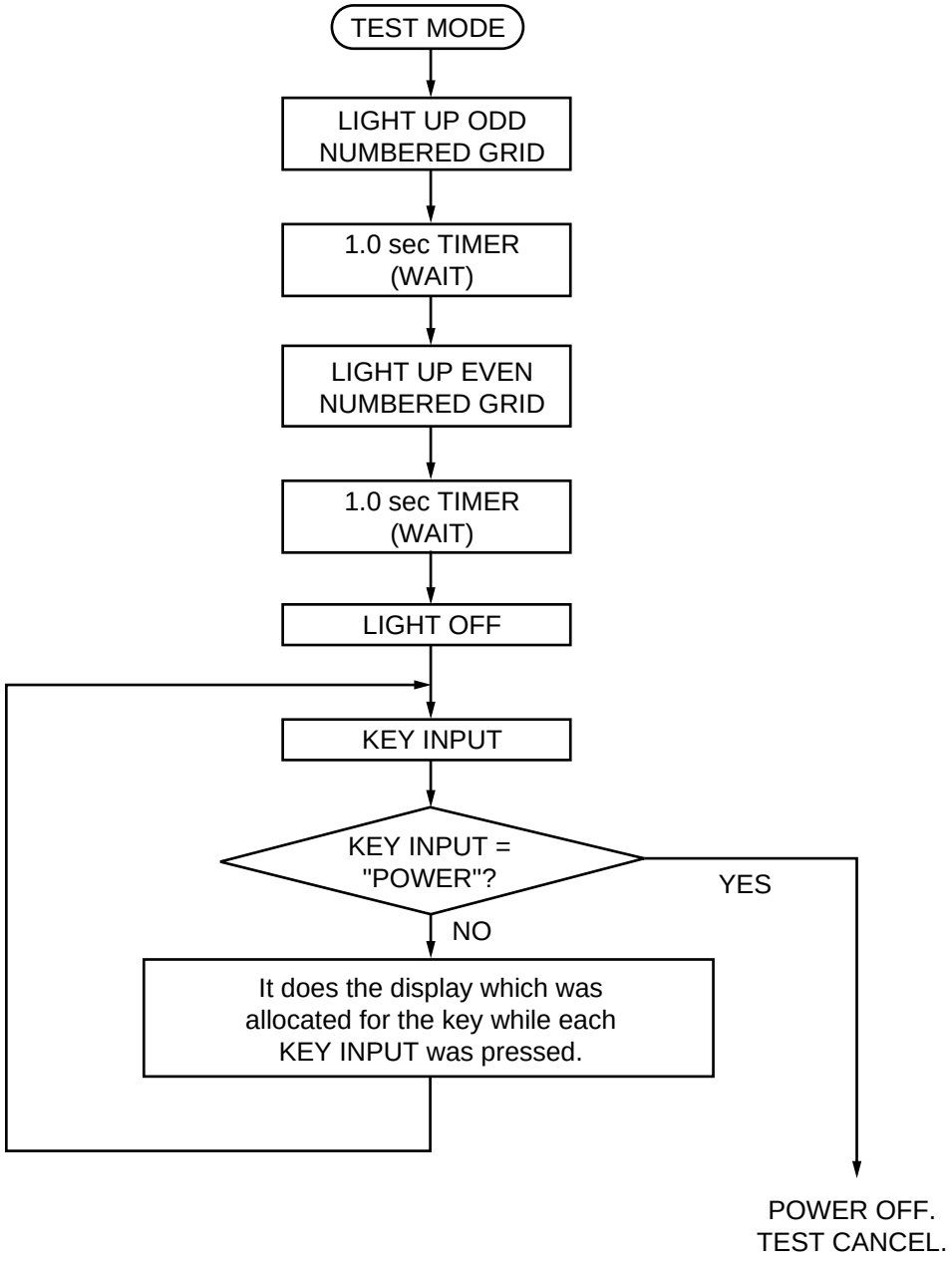
Button and command when MD TEST mode

Button Name	Command	Function
CD PLAY	B2	Servo adjustment mode
NORMAL EDIT	B4	Recording mode
HIGH EDIT	F2	Other mode
MD REC	A8	Menu change at each mode
MD PLAY	A2	Menu access
MD STOP	A7	Menu stop
SKIP UP	AA	Slide to outer
SKIP DOWN	AC	Slide to inner
VOLUME UP	F3	Adjustment value +1
VOLUME DOWN	F4	Adjustment value -1
CD STOP	F5	Display change
ON/STAND-BY	1F+D1	MD test mode
LOAD-SW ON	B5	Access loading operation
MD EJECT	B3	Eject operation

5. KEY test (Function: Key and last display)

Function: Key and last display

Power off after lighting up the odd number grids, even numbered grids and lighting up FL pipe segment which corresponded to KEY until TEST MODE is cancelled.


TEST MODE
LIGHT UP ODD NUMBERED GRID
1.0 sec TIMER (WAIT)
LIGHT UP EVEN NUMBERED GRID
1.0 sec TIMER (WAIT)
LIGHT OFF
KEY INPUT
KEY INPUT = "POWER"?
YES
NO
It does the display which was allocated for the key while each KEY INPUT was pressed.
POWER OFF. TEST CANCEL.

Notice: 1. REMOCON input during test mode is invalid.
2. Volume "0"

Segment light up when pressed correspond key

KEY	Segment	KEY	Segment
MD EJECT	ALL LIGHT UP	AUX	OVER
SP	↻	TUNER	ST & ◯◯
LP2	LP2	CD EJECT	TOC
LP4	LP4	VOLUME UP	RDS
NORMAL EDIT	GROUP	VOLUME DOWN	PTY
HIGH EDIT	HIGH	CD STOP	TP & ■
MD REC	REC	CD PLAY	TA
MEMORY	MEMORY	MD STOP	DISC
DISPLAY	RANDOM	MD PLAY	TRACK & ▮▮
X-BASS	BASS	SKIP UP	EON & ◴
EQUALIZER	T-EDIT	SKIP DOWN	TI & SLEEP

MD-E9000H

8. TUNER test

Set TUNER PRESET MEMORY according to below condition for each destination.

Condition

Function : TUNER
Band : FM MONO
Frequency : LOW FREQUENCY
Volume : LAST MEMORY
Preset G-EQ : LAST

PRESET LIST

1	FM	87.50 MHz
2	FM	108.00 MHz
3	FM	90.00 MHz
4	FM	106.00 MHz
5	FM	98.00 MHz
6	AM	522 kHz
7	AM	1620 kHz
8	AM	603 kHz
9	AM	1404 kHz
10	AM	990 kHz

9. RDS test mode 1 (RDS Distination only)

Function: — ASPM Test mode.
— CH4~CH40 will automatically memorize FM STEREO 87.50 MHz.
— CH1~CH3 will be used for this test mode.

Input: During POWER OFF (ECO/DEMO), press TUNER + ON/STAND-BY button.

.

Operation: — POWER ON at Tuner function.
— Press ASPM button to go to ASPM TEST MODE.
— Auto Scan will start from 105.00 MHz until 108.00 MHz.
— It will show the memorized station after sean.
— The test mode will be cancelled if press OTHER KEY first, before press ASPM button.
— After cancelled the test mode, the operation become NORMAL POWER ON according to the button input.

The test mode setting when it starts.

1. Volume : LAST CONDITION
2. Preset G-EQ : LAST CONDITION
3. X-Bass : LAST CONDITION
4. Function : TUNER
5. Band : FM STEREO
6. Frequency : 106.50 MHz

10. TUNER MEMORY CLEAR (Write in operation manual)

Work : Clear all TUNER PRESET MEMORY

Input : During POWER ON at TUNER function, press CLEAR/DELETE button more than 3 sec.

PRESET CLR?	10 sec

Press MEMORY/ENTER button to confirm the request.

COMPLETE	1.5 sec

finish.

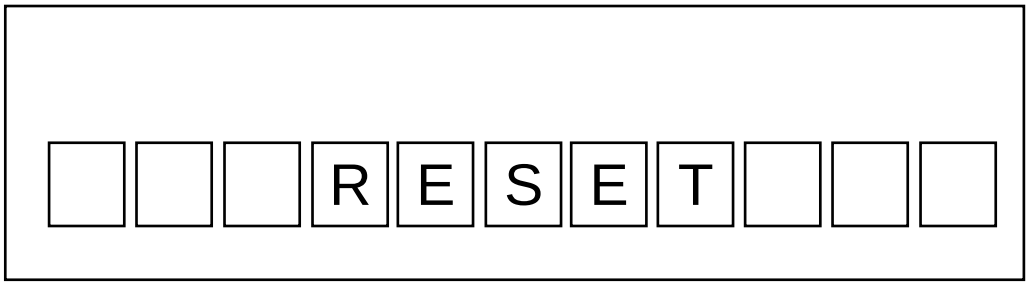
11. SOFTWARE RESET (Open to the user by manual explanation)

Function: — Software RESET.
— All the function condition will be initialize.
— After display "RESET", power will off.

Input: During POWER OFF, press DISPLAY + SKIP UP + ON/STAND-BY button

Operation: 1. If start from ECO, ON the AC RELAY (micom high speed)
2. Clear All RAM except HCMS RAM
3. INITALIZE all function condition
4. "RESET" display for 2 sec
5. Change to POWER OFF (DEMO MODE — default)

"RESET" display



ADJUSTMENT

TUNER SECTION

fL: Low-range frequency
fH: High-range frequency

- **AM IF/RF**

Signal generator: 400 Hz, 30%, AM modulated

Test Stage	Frequency	Frequency Display	Setting/ Adjusting Parts	Instrument Connection
AM IF	450 kHz	1,620 kHz	T351	*1
AM Band Coverage	—	522 kHz	(fL): T306 1.1 ± 0.1 V	*2
AM Tracking	990 kHz	990 kHz	(fL): T303	*1

*1. Input: Antenna Output: TP302
*2. Input: Antenna Output: TP301

- **FM**

Notes:

1: Description of the "FM IF Adjustment" is not carried on this Manual. It is because the IF coil in the FM front end section has been best adjusted in the factory so that its further adjustment is not needed at the field. When replacing the FM front end assembly, no adjustment is needed either.
2: The parts in the FM front end section are prepared in a complete unit, so you can't obtain each part individually.

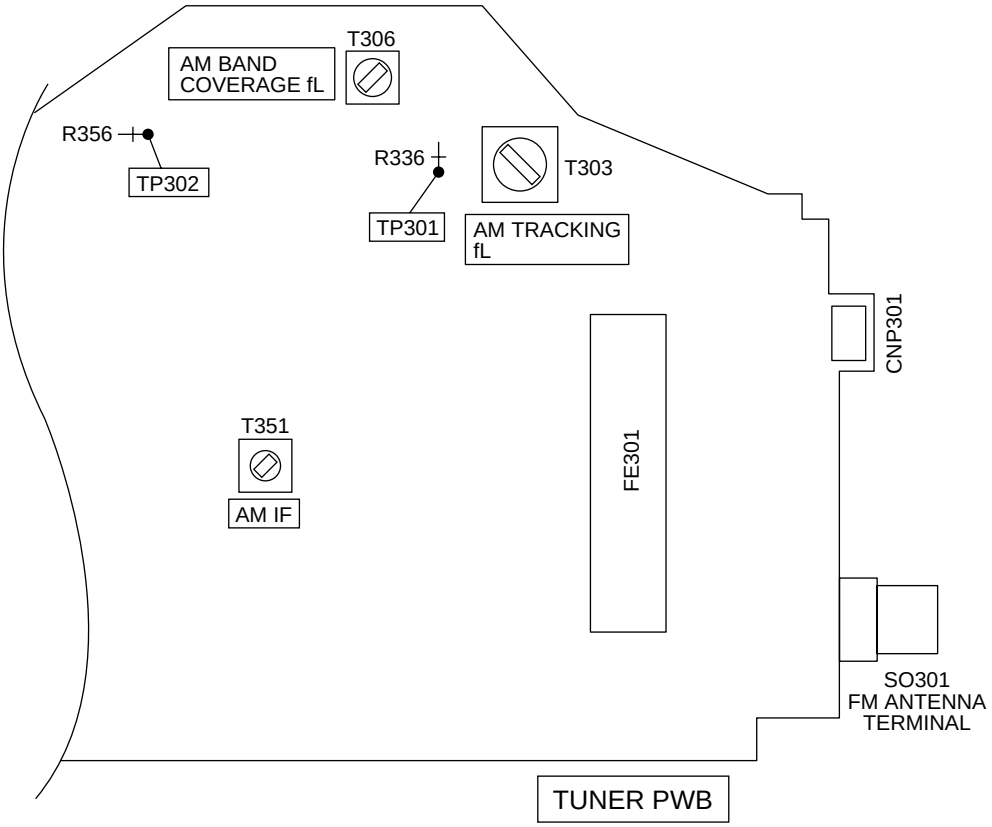


Figure 22 ADJUSTMENT POINTS

MD SECTION

Enter the test mode, adjust or set as shown in the following table according to the repair operations.

Execution item required / Repair operations	TEMP basic setting	Checking EEPROM setting	Writing the EEPROM setting	AUTO-YOBI adjustment	AUTO-adjustment	AUTO-AFB adjustment	Writing the EEPROM setting	Operation check	
	TEMP	EEPROM_SET	TEST-CANCEL	AUTO_YOBI	AUTO_ADJ	AUTO_AFB	TEST-CANCEL	TEST-PLAY	TEST-REC
PICK replacement	—	①	②	③	④	⑤	⑥	⑦	⑧
HEAD replacement	—	—	—	—	—	—	—	—	①
MECHANISM replacement	—	①	②	③	④	⑤	⑥	⑦	⑧
MAIN PWB assembly replacement	①	②	③	④	⑤	⑥	⑦	⑧	⑨
MD microcomputer replacement	—	①	②	—	—	—	②	③	④
MD LSI replacement	—	—	—	①	②	③	④	⑤	⑥
RF IC replacement	①	②	③	④	⑤	⑥	⑦	⑧	⑨
EEPROM IC replacement	①	②	③	④	⑤	⑥	⑦	⑧	⑨

number ① to ⑧ and ⑨ indicate the order of inplementation.

" – " is an item that you don't have to execute.

The EEPROM writing result is shown at the end of the test mode

OK_EEPROM: "SET" and "YOBI COMPLETE" were written normally

WR_EEPROM: Although "SET" was written normally, it was not written in the "YOBI COMPLETE" state.

→ Peform "AUTO-YOBI" adjustment. After making a normal adjustment, write the preliminary adjustment into the EEPROM.

NG_EEPROM: "SET" could not be written.

→ Check the connection between the MD microcomputer and the EEPROM.

1. Preparation for adjustment

Test disc

	Type	Test disc	Part No.
1	High reflection disc	TGYS1 (SONY) [for Playback]	RRCDT0101AFZZ
2	Low reflection disc	MiniDisc for checking the recording operation (commercially available MD)	————————
3	————————	Head Adjusting transparent	RRCDT0103AFZZ
4	Low reflection disc	Pre-adjustment disc [TEAC Test MD]	88GMMD-213AS or 88GMMD-318

Extension Cable (See Fig. 31)

	Type	Part No.
1	Extension PWB for servicing	RUNTK0581AFZZ
2	Extension Connector (2 Pin)	QCNWK0059AFZZ
3	Extension Flat Cable (9 Pin)	QCNWK0132AFZZ
4	Extension Flat Cable (28 Pin)	QCNWK0108AFZZ

2. Test Mode

Test mode setting method

1. While pressing the EQUALIZER button and PRESET UP button at the same time, and press the ON/STAND-BY button. (The unit changes over from the Ⓐ state to the Ⓑ state.)
2. Insert the playback-only disc 1 (high reflection disc) or the recordable disc 2 (low reflection disc). (State is changed to Ⓒ.)

Above procedures will set the unit to the test mode.

Ⓐ tsm 22○○e○○ : TEST MODE ○○ represents version of MD microcomputer.
↓ STOP state
Ⓑ EJECT
↓
Ⓒ AUT AJST

(When the MD STOP button is pressed in the Ⓒ state, the indication Ⓐ is restored. To restore Ⓒ again, press the CD PLAY/PAUSE button.)

● Entering the specific mode

Whenever the CD PLAY/PAUSE button is pressed, the mode is changed.
If the REC button is pressed instead, the mode will change in the opposite order.

AUTO YOBI (AUTO prelimirary adjustment) → AUTO AJST (AUTO adjustment) → AUT AFB (Advanced AFB adjustment) → RST YOBI (RESULT YOBI) → RESULT

MNU YOBI (MANUAL pre-adjustment) → MNU AJST (MANUAL adjustment) → MNU AFB (MANUAL AFB adjustment) → EEPROM_SET (EEPROM setting) → ERR DATA (ERRER DATA)

● Cancel of test mode

The data is written on EEPROM by pressing the POWER button. Then, if the power is turned off once, the unit returns to the normal state.

* Before pressing the POWER button, be sure to perform the AUTO preliminary adjustment, AUTO adjustment and AUTO AFB adjustment, and confirm that they are completed.
* After the value of EEPROM is changed or the AUTO pre-adjustment, AUTO adjustment, and AUTO AFB adjustment are performed again, write on EEPROM by pressing the POWER button. (When the POWER button is pressed, data is written on EEPROM.)
* When the value of EEPROM has been changed, write the data on EEPROM once. To perform adjustment using the data, set the unit to the TEST mode again, perform AUTO pre-adjustment, AUTO adjustment, and AUTO AFB adjustment, and then write the data again on EEPROM.

• Test Mode

1. EJECT mode	• TEMP setting (of EEPROM setting) • CONTROL setting (of EEPROM setting) • Setting of laser power (record/playback power)
2. AUTO pre-adjustment mode	• Automatic pre-adjustment is performed.
3. AUTO adjustment mode	• Automatic adjustment is performed. (After adjustment the grating adjustment mode is set.)
4. AUTO AFB adjustment mode	• Focus adjustment is performed.
• RESULT sub-mode • RESULT mode (final adjustment) • MANUAL pre-adjustment mode • MANUAL adjustment mode • MANUAL AFB adjustment mode • ERROR DATA	• Therefore do not set this mode since it is not necessary for the service.
5. EEPROM setting mode	• Various coefficients of digital servo are changed manually.
6. TEST-PLAY mode	• Continuous playback from the specified address is performed. • C1 error rate measurement, ADIP error rate measurement.
7. TEST-REC mode	• Continuous recording from the specified address is performed.
8. INNER mode	• The position where the INNER switch is turned on is measured.

1. EJECT mode

Step No.	Setting Method	Remarks	Display
Step 1	Test mode EJECT state		[_ _ E J E C T _ _ _]
Step 2	Press the CD STOP button.	Playback power output state	[p p w _ _ _ _ _ _ _]
Step 3	Press the CD STOP button.	Rec power output state	[r p w _ _ _ _ _ _ _]
Step 4	Press the CD STOP button.	Therefore do not set this mode since it is not necessary for the service.	[x p w _ _ _ _ _ _ _]
Step 5	Press the NORMAL CD ▶ MD EDIT button.	TEMP setting of EEPROM setting (The TEMP setting reference of the EEPROM.)	
Step 6	Press the DISPLAY (DEMO) button.	CONTROL setting of EEPROM setting (The CONTROL setting reference of the EEPROM.)	

* Normally, the voltage at pin 3 of IC1401 becomes as follows:
  Playback power output (ppw): Approx. DC 0.2 V
  Recording power output (rpw): Approx. DC 1.8 V

Confirmation of pickup laser power

It is possible to confirm in the record/playback mode with the aid of laser power meter. However, since the laser power meter measurement is characterized with dispersion, obtained data are used only for confirmation.

  Reference data (at room temperature 25 °C)
  Playback (ppw): 0.72 ± 0.1 mW
  Record (rpw): 5.5 ± 0.5 mW

Note:

Never see directly the laser light. Otherwise your eyes are injured.

2. AUTO pre-adjustment mode (Low reflection disc only)

With the pre-adjustment disc (MMD213AS or MMD-318)

Step No.	Setting Method	Remarks	Display
Step 1	Test mode STOP state		[t s m ○○○○ e ○○]
Step 2	Press once the CD PLAY button.	AUTO adjustment menu	[A U T O _ A J S T _]
Step 3	Press the MD REC button.	AUTO pre-adjustment menu	[_ A U T _ Y O B I _]
Step 4	Press once the MD PLAY button. End of adjustment	• During automatic adjustment ✳✳✳ changes as follows. HAo→ • • • • • • • • • • →TCO If adjustment is OK, Step 5. If adjustment is NG, Step 6.	[✳✳✳ : _ _ _ _ _ _]
Step 5	Press the MD STOP button.	STEP 2	[_ C O M P L E T E _]
Step 6	Adjustment value output Press the MD STOP button.	 STEP 2 AUTO adjustment menu	[C a n ' t _ A D J .]

• ✳✳✳ : Adjustment name

3. AUTO adjustment mode

Step No.	Setting Method	Remarks	Display
Step 1	Test mode STOP state		[t s m ○○○○ e ○○]
Step 2	Press once the CD PLAY button.	AUTO adjustment menu	[A U T O _ A J S T _]
Step 3	Press once the MD PLAY button. End of adjustment	• In case of high reflection disc ✳✳✳ changes as follows. PEG→HAG • In case of low reflection disc ✳✳✳ changes as follows. PEG→LAG If adjustment is OK, Step 4. If adjustment is NG, Step 7.	[✳✳✳ : _ _ _ _ _ _]
Step 4	 Press the MD PLAY button. Press the MD STOP button.	For grating adjustment STEP 5 STEP 2	[_ C O M P L E T E _] * Note 1
Step 5	Continuous playback (pit section) Continuous playback (groove section)	Confirmation of C1 error	[s □□□□ c ○○○○] [a □□□□ c ○○○○]
Step 6	Press the CD STOP button. Press the MD STOP button.	Conformation of ADIP error (Low reflection only) STEP 2 AUTO adjustment menu	[a □□□□ a ○○○○]
Step 7	Adjustment value output Press the MD STOP button.	 STEP 2 AUTO adjustment menu	[C a n ' t _ A D J .]

• ✳✳✳ : Adjustment name, ○○ : Measurement value, □□□□ : Address

*** Note 1:**

Depending on the disc, "#COMPLETE_" may be displayed, which means that the ON position of the INNER switch cannot be identified clearly. In this case, check the switch in the INNER mode using the specified disc. However, this is not a problem in AUTO adjustment.

4. AUTO AFB adjustment mode

Step No.	Setting Method	Remarks	Display
Step 1	Test mode STOP state		[t s m ○○○○ e ○○]
Step 2	Press the CD PLAY button two times.	AUTO AFB adjustment menu	[_ A U T _ A F B _ _]
Step 3	Press once the MD PLAY button.		[A F B ○○ _△△△△]
Step 4	Adjustment value output Press the MD STOP button.	STEP 2 AUTO AFB adjustment	[○○ _ △△△△△△△△]

• ○○ , △△△△ : Measurement value

5. EEPROM setting mode

a) Focus setting

Step No.	Setting Method	Display
Step 1	Test mode STOP state	[t s m ○○○○ e ○○]
Step 2	Press the CD PLAY button eight times.	[E E P R O M_ S E T]
Step 3	Press the MD PLAY button.	[_ _ F o c u s _ _ _]
Step 4	Press the MD PLAY button.	[F G _ _ _ _ _ _ ◆◆]
Step 5	Press the CD PLAY button.	[F G 2 _ _ _ _ _ ◆◆]
Step 6	Press the CD PLAY button.	[F F 0 _ _ _ _ _ ◆◆]
Step 7	Press the CD PLAY button.	[F F 1 _ _ _ _ _ ◆◆]
Step 8	Press the CD PLAY button.	[F F 2 _ _ _ _ _ ◆◆]
Step 9	Press the CD PLAY button.	[F Z H L E V _ _ ◆◆]
Step 10	Press the CD PLAY button.	[F O K L E V h _ ◆◆]
Step 11	Press the CD PLAY button.	[F O K L E V L _ ◆◆]
Step 12	Press the CD PLAY button.	[F O S T n _ _ _ ◆◆]
Step 13	Press the CD PLAY button.	[D S C J G _ _ _ ◆◆]

• ◆◆ : Setting value

b) Spin setting

Step No.	Setting Method	Display
Step 1	Test mode STOP state	[t s m ○○○○ e ○○]
Step 2	Press the CD PLAY button eight times.	[E E P R O M_ S E T]
Step 3	Press the MD PLAY button.	[_ _ F o c u s _ _ _]
Step 4	Press the CD PLAY button.	[_ S p i n d l e _ _]
Step 5	Press the MD PLAY button.	[S P G _ _ _ _ _ ◆◆]
Step 6	Press the CD PLAY button.	[S P G _ i n _ _ ◆◆]
Step 7	Press the CD PLAY button.	[S P G _ m i d _ ◆◆]
Step 8	Press the CD PLAY button.	[S P G _ o u t _ ◆◆]
Step 9	Press the CD PLAY button.	[S P G M _ _ _ _ ◆◆]
Step 10	Press the CD PLAY button.	[S P 1 _ _ _ _ _ ◆◆]
Step 11	Press the CD PLAY button.	[S P 2 _ _ _ _ _ ◆◆]
Step 12	Press the CD PLAY button.	[S P 2 2 _ _ _ _ ◆◆]
Step 13	Press the CD PLAY button.	[S P 3 _ _ _ _ _ ◆◆]
Step 14	Press the CD PLAY button.	[S P 4 _ _ _ _ _ ◆◆]
Step 15	Press the CD PLAY button.	[S P 5 _ _ _ _ _ ◆◆]
Step 16	Press the CD PLAY button.	[S P 5 2 _ _ _ _ ◆◆]
Step 17	Press the CD PLAY button.	[S P D L I M _ _ ◆◆]
Step 18	Press the CD PLAY button.	[S P K L E V m _ ◆◆]

• ◆◆ : Setting value

c) Tracking setting

Step No.	Setting Method	Display
Step 1	Test mode STOP state	[t s m ○○○○ e ○○]
Step 2	Press the CD PLAY button eight times.	[E E P R O M_ S E T]
Step 3	Press the MD PLAY button.	[_ _ F o c u s _ _ _]
Step 4	Press the CD PLAY button two times.	[_ T r a c k i n g _]
Step 5	Press the MD PLAY button.	[T G _ _ _ _ _ _ ◆◆]
Step 6	Press the CD PLAY button.	[T G 2 _ _ _ _ _ ◆◆]
Step 7	Press the CD PLAY button.	[T F 0 _ _ _ _ _ ◆◆]
Step 8	Press the CD PLAY button.	[T F 1 _ _ _ _ _ ◆◆]
Step 9	Press the CD PLAY button.	[T F 2 _ _ _ _ _ ◆◆]
Step 10	Press the CD PLAY button.	[F T 3 _ _ _ _ _ ◆◆]
Step 11	Press the CD PLAY button.	[S V C N T 4 _ _ ◆◆]
Step 12	Press the CD PLAY button.	[T R B L V o _ _ ◆◆]
Step 13	Press the CD PLAY button	[T R B L V t _ _ ◆◆]
Step 14	Press the CD PLAY button	[T R K L V o _ _ ◆◆]
Step 15	Press the CD PLAY button	[T R K L V t _ _ ◆◆]
Step 16	Press the CD PLAY button	[T D P W o _ _ _ ◆◆]
Step 17	Press the CD PLAY button	[T D P W t _ _ _ ◆◆]
Step 18	Press the CD PLAY button	[S L C T o _ _ _ ◆◆]
Step 19	Press the CD PLAY button	[S L C T t _ _ _ ◆◆]
Step 20	Press the CD PLAY button.	[S L C T m _ _ _ ◆◆]
Step 21	Press the CD PLAY button.	[T C R S C 1 P _ ◆◆]
Step 22	Press the CD PLAY button.	[T C R S C 0 h _ ◆◆]
Step 23	Press the CD PLAY button.	[T C R S C 0 L _ ◆◆]
Step 24	Press the CD PLAY button.	[T C R S C H h _ ◆◆]
Step 25	Press the CD PLAY button.	[T C R S C H L _ ◆◆]
Step 26	Press the CD PLAY button.	[C O T L V p _ _ ◆◆]
Step 27	Press the CD PLAY button.	[C O T L V r _ _ ◆◆]
Step 28	Press the CD PLAY button.	[J P i n t _ _ _ ◆◆]
Step 29	Press the CD PLAY button.	[K I K 1 0 _ _ _ ◆◆]

• ◆◆ : Setting value

d) Sled setting

Step No.	Setting Method	Display
Step 1	Test mode STOP state	[t s m ○○○○ e ○○]
Step 2	Press the CD PLAY button eight times.	[E E P R O M_ S E T]
Step 3	Press the MD PLAY button.	[_ _ F o c u s _ _ _]
Step 4	Press the CD PLAY button three times.	[_ _ _ S l e d _ _ _]
Step 5	Press the MD PLAY button.	[S L G _ _ _ _ _ ◆◆]
Step 6	Press the CD PLAY button.	[S L 2 _ _ _ _ _ ◆◆]
Step 7	Press the CD PLAY button.	[S L D L I M _ _ ◆◆]
Step 8	Press the CD PLAY button.	[S L D L E V _ _ ◆◆]
Step 9	Press the CD PLAY button.	[S L K L V k _ _ ◆◆]
Step 10	Press the CD PLAY button.	[S L K L V t _ _ ◆◆]
Step 11	Press the CD PLAY button.	[S L K L V m _ _ ◆◆]
Step 12	Press the CD PLAY button.	[S L B K m _ _ _ ◆◆]
Step 13	Press the CD PLAY button.	[S L K r i o _ _ ◆◆]
Step 14	Press the CD PLAY button.	[S L K r o i _ _ ◆◆]
Step 15	Press the CD PLAY button.	[S L K l i o _ _ ◆◆]
Step 16	Press the CD PLAY button.	[S L K l o i _ _ ◆◆]
Step 17	Press the CD PLAY button.	[I N N E R 1 _ _ ◆◆]
Step 18	Press the CD PLAY button.	[I N N E R u _ _ ◆◆]
Step 19	Press the CD PLAY button.	[E J _ W A I T _ ◆◆]

• ◆◆ : Setting value

MD-E9000H

e) TEMP setting

Step No.	Setting Method	Display
Step 1	EJECT state (or state without mechanism)	[_ _ E J E C T _ _ _]
Step 2	Press the NORMAL CD ▶ MD EDIT button.	[T E M P_ ○○ _ ◆◆]

• ◆◆ : Setting value, ○○ : Measurement value

f) CONTROL setting

Step No.	Setting Method	Display
Step 1	Test mode STOP state	[t s m ○○○○ e ○○]
Step 2	Press the CD PLAY button eight times.	[E E P R O M_ S E T]
Step 3	Press the MD PLAY button.	[_ _ F o c u s _ _ _]
Step 4	Press the CD PLAY button five times.	[_ C o n t r o l _ _]
Step 5	Press the MD PLAY button.	[C O N T R L 1 _ ◆◆]
Step 6	Press the CD PLAY button.	[C O N T R L 2 _ ◆◆]
Step 7	Press the CD PLAY button.	[A D J T T M _ _ ◆◆]
Step 8	Press the CD PLAY button.	[H D E Q A D _ _ ◆◆]
Step 9	Press the CD PLAY button.	[L D E Q A D _ _ ◆◆]
Step 10	Press the CD PLAY button.	[G D E Q A D _ _ ◆◆]
Step 11	Press the CD PLAY button.	[G D E Q A D 2 _ ◆◆]
Step 12	Press the CD PLAY button.	[H D E Q B C _ _ ◆◆]
Step 13	Press the CD PLAY button.	[L D E Q B C _ _ ◆◆]
Step 14	Press the CD PLAY button.	[G D E Q B C _ _ ◆◆]
Step 15	Press the CD PLAY button.	[G D E Q B C 2 _ ◆◆]
Step 16	Press the CD PLAY button.	[H A L S G _ _ _ ◆◆]
Step 17	Press the CD PLAY button.	[L A L S G _ _ _ ◆◆]
Step 18	Press the CD PLAY button.	[G A L S G _ _ ◆◆]
Step 19	Press the CD PLAY button.	[H A L S O F S _ ◆◆]
Step 20	Press the CD PLAY button.	[L A L S O F S _ ◆◆]
Step 21	Press the CD PLAY button.	[G A L S O F S _ ◆◆]

• ◆◆ : Setting value

g) ADJUST setting

Step No.	Setting Method	Display
Step 1	Test mode STOP state	[t s m ○○○○ e ○○]
Step 2	Press the CD PLAY button eight times.	[E E P R O M_ S E T]
Step 3	Press the MD PLAY button.	[_ _ F o c u s _ _ _]
Step 4	Press the CD PLAY button six times.	[A D J S E T _ _ _ _]
Step 5	Press the MD PLAY button.	[C O K _ _ _ _ _ ◆◆]
Step 6	Press the CD PLAY button.	[F A T _ _ _ _ _ ◆◆]
Step 7	Press the CD PLAY button.	[T A T _ _ _ _ _ ◆◆]
Step 8	Press the CD PLAY button.	[C A T _ _ _ _ _ ◆◆]
Step 9	Press the CD PLAY button.	[F A B _ _ _ _ _ ◆◆]
Step 10	Press the CD PLAY button.	[S T R _ _ _ _ _ ◆◆]
Step 11	Press the CD PLAY button.	[S F S _ _ _ _ _ ◆◆]
Step 12	Press the CD PLAY button.	[S T C _ _ _ _ _ ◆◆]

• ◆◆ : Setting value

h) REC bit setting

Step No.	Setting Method	Display
Step 1	Test mode STOP state	[t s m ○○○○ e ○○]
Step 2	Press the CD PLAY button eight times.	[E E P R O M_ S E T]
Step 3	Press the MD PLAY button.	[_ _ F o c u s _ _ _]
Step 4	Press the CD PLAY button seven times.	[R E C b i t _ S E T]
Step 5	Press the MD PLAY button.	[S P _ W R 5 0 _ ◆◆]
Step 6	Press the CD PLAY button.	[S P _ W R 5 6 _ ◆◆]
Step 7	Press the CD PLAY button.	[S P _ W R 4 4 _ ◆◆]
Step 8	Press the CD PLAY button.	[S P _ W R 5 3 _ ◆◆]
Step 9	Press the CD PLAY button.	[L P 2 W R 5 0 _ ◆◆]
Step 10	Press the CD PLAY button.	[L P 2 W R 5 6 _ ◆◆]
Step 11	Press the CD PLAY button.	[L P 2 W R 4 4 _ ◆◆]
Step 12	Press the CD PLAY button.	[L P 2 W R 5 3 _ ◆◆]
Step 13	Press the CD PLAY button.	[L P 4 W R 5 0 _ ◆◆]
Step 14	Press the CD PLAY button.	[L P 4 W R 5 6 _ ◆◆]
Step 15	Press the CD PLAY button.	[L P 4 W R 4 4 _ ◆◆]
Step 16	Press the CD PLAY button.	[L P 4 W R 5 3 _ ◆◆]
Step 17	Press the CD PLAY button.	[R V D _ _ _ _ _ ◆◆]

• ◆◆ : Setting value

6. TEST-PLAY mode

(For confirmation of the playback ability at the named address.)

Step No.	Setting Method	Remarks	Display
Step 1	Test mode STOP state		[t s m○○○○e ○○]
Step 2	Press the NORMAL CD ▶ MD EDIT button.	TEST-PLAY menu	[T E S T _ P L A Y _]
Step 3	Press the CD STOP button. Press the MD PLAY button.	ADRES setting (Target address initial value is indicated)	[A D R E S _ 0 0 3 2]
Step 4	Continuous playback (pit section) Continuous playback (groove section)	(Address + C1 error indication) (Address + C1 error indication)	[s □□□□ c ○○○○] [a □□□□ c ○○○○]
Step 5	Press the CD STOP button. Continuous playback (groove section)	(Address + ADIP error indication)	[a □□□□ a ○○○○]
Step 6	Press the MD STOP button.	TEST-PLAY menu	[T E S T _ P L A Y _]

• Whenever the NORMAL CD ▶ MD EDIT button is pressed in the address setting mode, the address changes as follows.

0 0 3 2 → 0 3 C 0 → 0 7 0 0 → 0 8 A 0 → 0 9 5 0 →0 0 3 2 → ·····

7. TEST-REC mode

With recording mini disk (For confirmation of the playback ability at the named address.)

Step No.	Setting Method	Remarks	Display
Step 1	Test mode STOP state		[t s m○○○○e ○○]
Step 2	Press the NORMAL CD ▶ MD EDIT button two times.	TEST-REC menu	[T E S T _ R E C _ _]
Step 3	Press the CD STOP button.	ADRES setting (indication of address initial value)	[a 0 0 3 2 _ p w ▽▽]
Step 4	Press the MD PLAY button.	Continuous recording	[a □□□□ _ p w ▽▽]
Step 5	Press the MD STOP button.	TEST-REC menu	[T E S T _ R E C _ _]

• Whenever the NORMAL CD ▶ MD EDIT button is pressed in the address setting mode, the address changes as follows.

0 0 3 2 → 0 3 C 0 → 0 7 0 0 → 0 8 A 0 → 0 9 5 0 →0 0 3 2 → ·····

8. INNER mode

Step No.	Setting Method	Remarks	Display
Step 1	Test mode STOP state		[t s m○○○○e ○○]
Step 2	Press the HIGH CD ▶ MD EDIT button.	INNER menu	[_ _ I N N E R _ _ _]
Step 3	Press the MD PLAY button.	INNER switch position measurement (SUBQ address and C1 error are also indicated.)	[s □□□□ c ○○○○]
Step 4	Press the MD STOP button.	INNER menu	[_ _ I N N E R _ _ _]

• □□□□ : Address

MD-E9000H

① Adjustment

Load a high-reflective TYGS1 test disc.

Note:

Adjust the position of the lead-in switch between FF85 to FFD2.

1. Loosen the screw (A1) x 1 pc., fixing the mechanism switch PWB.
2. Retighten the screw while pushing the PWB in the direction of arrow A if the switch position is at FF85 or lower, or in the direction of arrow B if it is at FFD2 or higher, and measure its position again.
   After adjusting the position, fix it with the screw (A1) x 1 pc. (See Fig. 30-1)

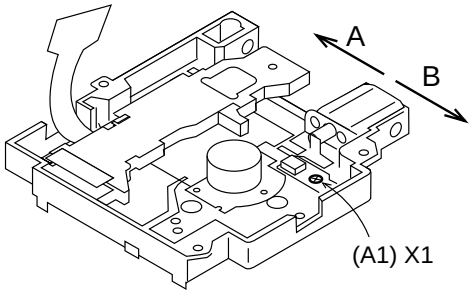


Figure 30-1

② Confirmation

Check that the display shows "_COMPLETE_" instead of "#COMPLETE_" in step 4 of the AUTO adjustment mode.

● Rotating the loading motor forcibly

The loading motor can be rotated forcibly by rotating the VOL UP/DOWN button while STOP or EJECT in the test mode appears on the display.

● Magnetic head mounting position check

- Check the mounting position whenever the magnetic head and the optical pickup are replaced.
- Move the optical pickup to the center to adjust the position easily.

1. Set the transparent disc for checking the head.
2. Press down the magnetic head up shift arm by hand to raise the magnetic head.
3. View the set from above to check whether the magnetic head aligns with the optical pickup objective lens.
4. Check that the magnetic head moves up and down smoothly. (See Fig. 30-2)

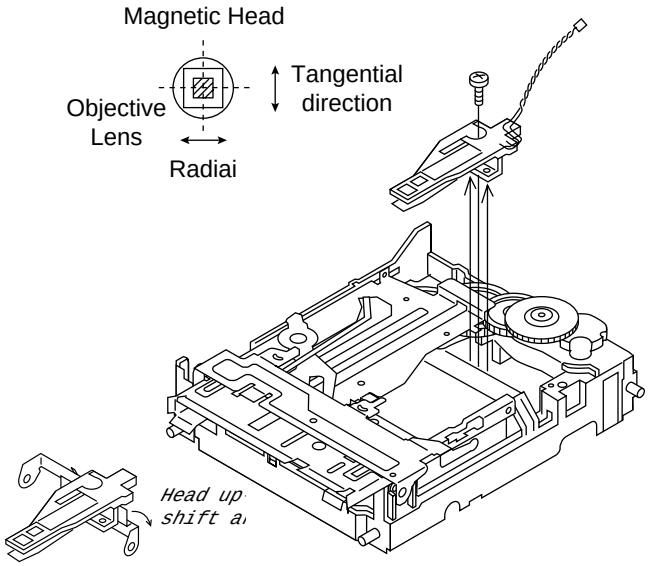


Figure 30-2

● Mechanism Adjustment

1. Optical pickup grating inspecting method

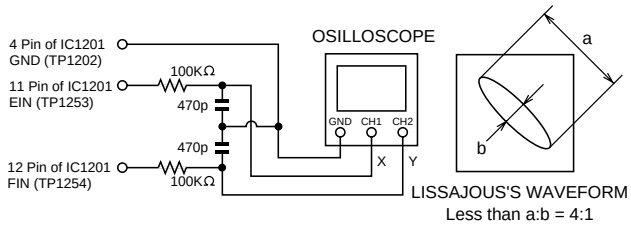


Figure 30-3 Optical Pickup Grating Deviation Measuring Method

After auto adjustment (COMPLETE appears) in the test mode (auto) using the high reflection MD disc TGYS1, adjust the Lissajou's waveform (x-y) of EOUT to FOUT.

1. Slightly loosen the 3 screws of the spindle motor, adjust while observing the Lissajou's waveform.
2. After adjustment, tighten screws ①, ②, and ③ in numerical order. (See Fig. 30-4)

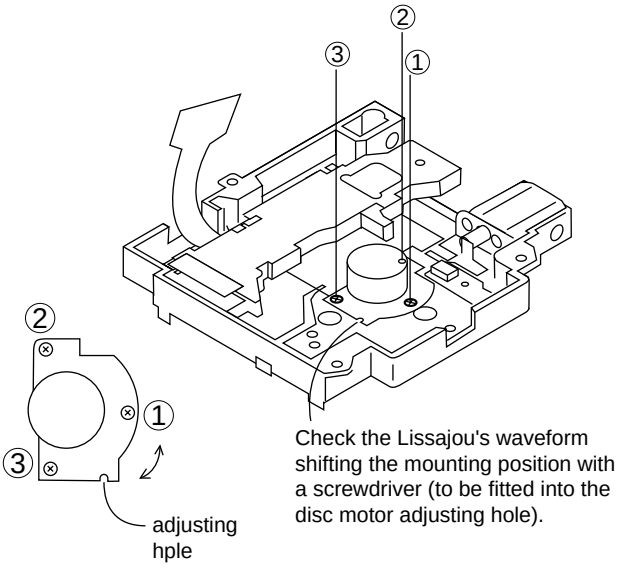


Figure 30-4

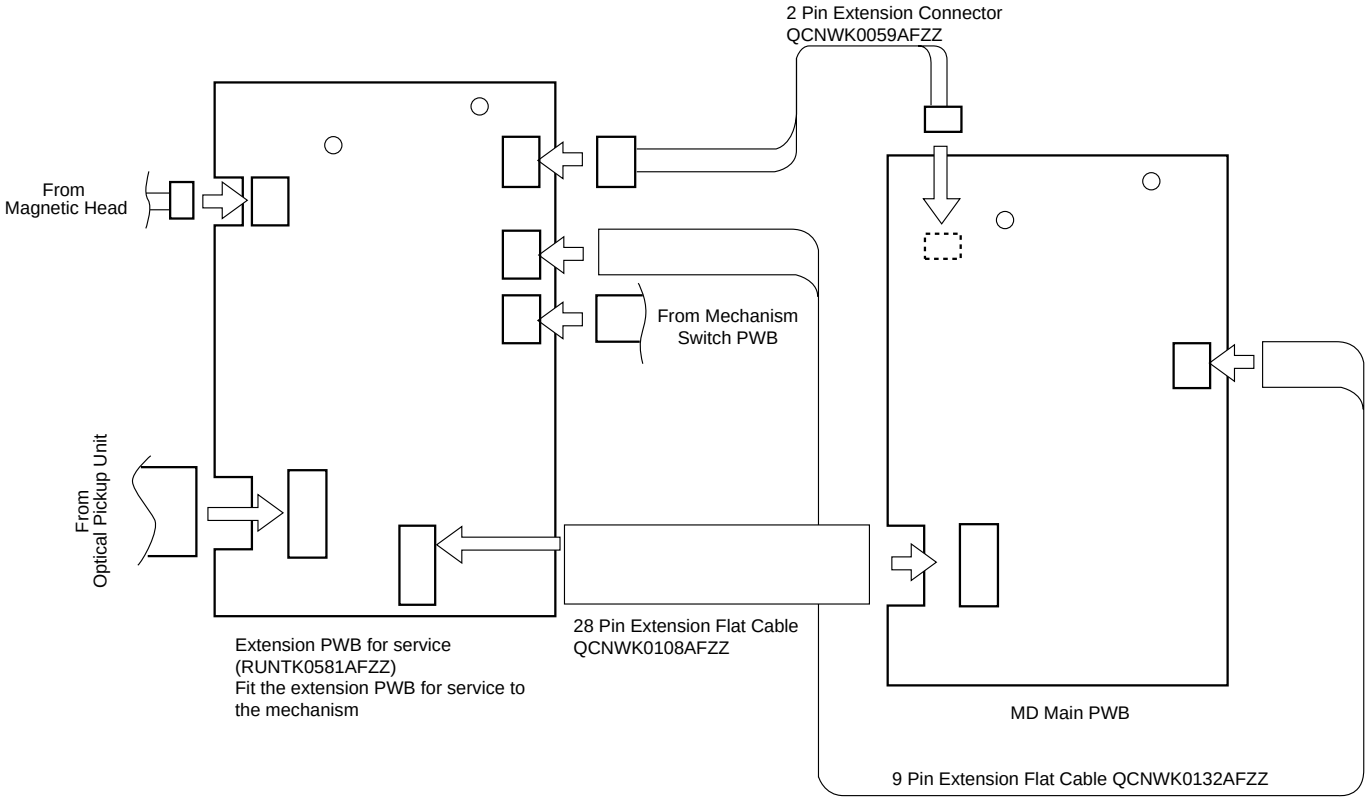

2 Pin Extension Connector
QCNWK0059AFZZ
From
Magnetic Head
From Mechanism
Switch PWB
From
Optical Pickup Unit
Extension PWB for service
(RUNTK0581AFZZ)
Fit the extension PWB for service to
the mechanism
28 Pin Extension Flat Cable
QCNWK0108AFZZ
MD Main PWB
9 Pin Extension Flat Cable QCNWK0132AFZZ

Figure 31

ERROR MESSAGE LIST

MD error messages

Error Display	Error Message	Remarks
Can't REC	• Errors occurred 10 times continuously in the REC-PLAY mode. • In the REC-PLAY mode, recording enable cluster became 0 due to errors. • Cannot read the address. The unit cannot enter the REC mode for 20 seconds regardless of repetitive tries.	• Check for scratch, dust, fingerprints, or black spots on the disc. Check that the disc is not eccentric or largely deflected.
Can't COPY	• During the REC-PAUSE or REC-PLAY mode, the disc was judged as follows according to the channel status of the digital signal input at D-IN: ① It is not an audio disc. ② It is not for public use. ③ Due to the inversion of COPY bit on the CD, the contents cannot be copied.	• Check if it is the copy-prohibited disc (Example: CD-R etc.).
NO SIG.	• During the REC-PAUSE, REC-PLAY, or CD FUNC playback mode, the following occurred responding to the digital signal input at D-IN: ① Digital IN PLL is unlocked. ② PLL is locked even if FS is not 44.1 kHz.	• Check for an abnormality with the D-IN signal line.
TOC FULL	• There is no space left for track numbers or character information (track names, disc name, etc.). • No recordable space was found when entering the REC-PAUSE mode.	• Replace the disc with the one on which the space for recording UTOC is left.
Can't READ u	• FTNO > LTNO has been recognized. • FTNO is not 0 or 1. • Cannot read UTOC recorded on the disc.	• There is an error with UTOC data. Replace the disc.
TOC FROM a	• The start address > end address has been recognized.	• There is an error with UTOC data. Replace the disc.
TOC FROM L0-4	• One of UTOC 0-4 data is looping.	• There is an error with UTOC data. Replace the disc.
NOT AUDIO	• Non-audio data is recorded in the track mode of currently selected track number.	• Select another track number or replace the disc.
? DISC	• The ASCII codes data "MINI" of the system ID written in TOC is not correct. • The disc type written in TOC does not belong to either of the pre-master MD, recording MD or hybrid MD.	• This is a nonstandard disc. Replace the disc and check.
DISC FULL	• No recordable space was found when entering the REC-PAUSE mode.	• Replace the disc with the one on which the recording space for UTOC is left.
PROTECT	• You tried recording or editing on a disc with the erase-prevention tab moved. • You tried editing the track that is write-protected due to the information written in UTOC.	• Move the tab back to its original position and try recording or editing again. * Try editing other tracks that are not write-protected.
Can't EDIT	• Conditions in each editing function have not been satisfied.	• The unit is not operated properly. Try again in right procedures.
TEMP OVER	• The temperature inside of the set (MD unit) becomes too high due to an error.	• Check the remedy on the troubleshooting chart. • Is the unit used in a place of high temperature?
Can't READ r **Can't READ s** **Can't READ w**	• The read data is not correct, or data has not been read properly. • An error occurred while recording sound data, and the recording could not be completed.	• There may be an error in TOC or UTOC data or scratches on the disc. Replace the disc.
Can't READ s **Can't READ r**	• The read data is not correct. • TOC information cannot be read. • There may be scratches on the disc. Replace the disc.	• TOC information on the disc does not comply with the MD standard. Replace the disc.
Can't WRITE	• An error occurred while overwriting UTOC, and it could not be overwritten properly.	• There may be scratches on the disc. Replace the disc.
BLANK MD	• Although UTOC is read, total number of letters of TNO and NAME is 0.	• Check that the disc is a recordable disc by recording on it.
Er-MD41	• UTOC can be read but cannot be overwritten.	• Is the recording head positioned properly? Check the connection between the PWB and recording head.
Er-MD80	• EEPROM data is not correct.	• Reset the unit and try again. If it does not restore the unit, replace EEPROM.
Power?	• Due to the abnormality with the power supply, MD unit cannot be operated properly.	• Reset the unit and try again. If it does not restore the unit, the power supply circuit is defective. Check the DC voltage of Q550 Ⓔ , and Q580 Ⓔ .

The details description of mechanism error

Error Display	Error Message
E r - M D 1 ✳	Cannot eject the disc.
E r - M D 2 ✳	The head does not ascend.
E r - M D 3 ✳	The head does not descend.

		HINF (93 Pin of IC1401)
✳ = E	EJECT complete position	< 1.4 V
✳ = M	LOAD/EJECT halfway position	> 3 V
✳ = L	LOAD complete position	2.475 ~ 2.8 V
✳ = D	HEAD DOWN position	2.0875 ~ 2.2375 V

EEPROM WRITING PROCEDURE

● EEPROM (IC1402) writing procedure

1. Method for setting the reference temperature value

(This setting should be performed quickly at a room temperature, between 21°C to 29°C when the PWB is not hot.)

① When replacing the EEPROM, wait until it has cooled down.
② Connect the main unit using the single MD main PWB.
③ Enter the test mode as shown on page 24.
"EJECT"
④ Press the NORMAL CD ▶ MD EDIT button.
"TEMP ○○ ◆◆"
○○: Measured temperature, ◆◆: Temperature setting
⑤ Find the temperature correction value for the current ambient temperature on the following table. Adjust the temperature correction value using the VOLUME UP/DOWN button.

Ambient Temperature	Correction
+ 21.0 °C ~ + 23.2 °C	-1 H
+ 23.3 °C ~ + 26.8 °C	± 0 H
+ 26.9 °C ~ + 29.0 °C	+1 H

An example: When ambient temperature is 22 °C and measured temperature is 7A H
Temperature setting = 7A H - 01 H
= 79 H
* When the measured temperature fluctuates between two values, take lower one (if temperature fluctuates between 7A H and 79 H, take 79 H).

⑥ Press the POWER button and write the temperature setting into the EEPROM.

2. Method for making settings other than the reference temperature

① Install the MD main PWB in the mechanism, and connect it to the main unit.
② Enter the test mode as shown on page 24, and insert a disc.
"AUTO AJST"
③ Press the CD PLAY button seven times.
"EEPROM SET"
④ Set the value according to the EEPROM DATA LIST using the VOLUME UP/DOWN button.
⑤ Press the POWER button, and the settings will be written into the EEPROM.
⑥ Enter the test mode again, perform an "AUTO YOBI adjustment", and write the results into the EEPROM.

EEPROM DATA LIST (Version : 01)

Focus setting

Item indication		Setting
F G	○○	9 B H
F G 2	○○	B 1 H
F F 0	○○	1 0 H
F F 1	○○	7 0 H
F F 2	○○	E 0 H
F Z H L E V	○○	E D H
F O K L E V h	○○	0 7 H
F O K L E V L	○○	0 9 H
F O S T n	○○	2 C H
D S C J G	○○	0 D H

Spin setting

Item indication		Setting
S P G	○○	1 1 H
S P G — i n	○○	6 0 H
S P G — m i d	○○	4 B H
S P G — o u t	○○	3 B H
S P G M	○○	9 6 H
S P 1	○○	1 0 H
S P 2	○○	9 3 H
S P 2 2	○○	9 3 H
S P 3	○○	E D H
S P 4	○○	E E H
S P 5	○○	2 0 H
S P 5 2	○○	2 0 H
S P D L I M	○○	6 2 H
S P K L E V m	○○	1 6 H

Tracking setting

Item indication	Setting
TG ○○	49H
TG2 ○○	6BH
TF0 ○○	10H
TF1 ○○	6BH
TF2 ○○	F0H
FT3 ○○	08H
SVCNT4 ○○	01H
TRBLVo ○○	62H
TRBLVt ○○	4CH
TRKLVo ○○	5BH
TRKLVt ○○	2BH
TDPWo ○○	67H
TDPWt ○○	21H
SLCTo ○○	00H
SLCTt ○○	50H
SLCTm ○○	53H
TCRSCIP ○○	16H
TCRSC0h ○○	00H
TCRSC0L ○○	FAH
TCRSCHh ○○	02H
TCRSCHL ○○	02H
COTLVP ○○	0AH
COTLVr ○○	28H
JPint ○○	00H
KIK10 ○○	64H

Sled setting

Item indication	Setting
SLG ○○	46H
SL2 ○○	10H
SLDLIM ○○	7FH
SLDLEV ○○	14H
SLKLVk ○○	60H
SLKLVt ○○	34H
SLKLVm ○○	60H
SLBKm ○○	08H
SLKrio ○○	64H
SLKroi ○○	62H
SLKlio ○○	64H
SLKloi ○○	60H
INNER1 ○○	86H
INNERu ○○	D0H
EJ_WAIT ○○	78H

Control setting

Item indication	Setting
CONTRL1 ○○	08H
CONTRL2 ○○	01H
ADJTTM ○○	14H
HDEQAD ○○	92H
LDEQAD ○○	8EH
GDEQAD ○○	91H
GDEQAD2 ○○	91H
HDEQBC ○○	8CH
LDEQBC ○○	8FH
GDEQBC ○○	8AH
GDEQBC2 ○○	8AH
HALSG ○○	11H
LALSG ○○	11H
GALSG ○○	11H
HALSOFS ○○	FFH
LALSOFS ○○	00H
GALSOFS ○○	00H

ADJUST setting

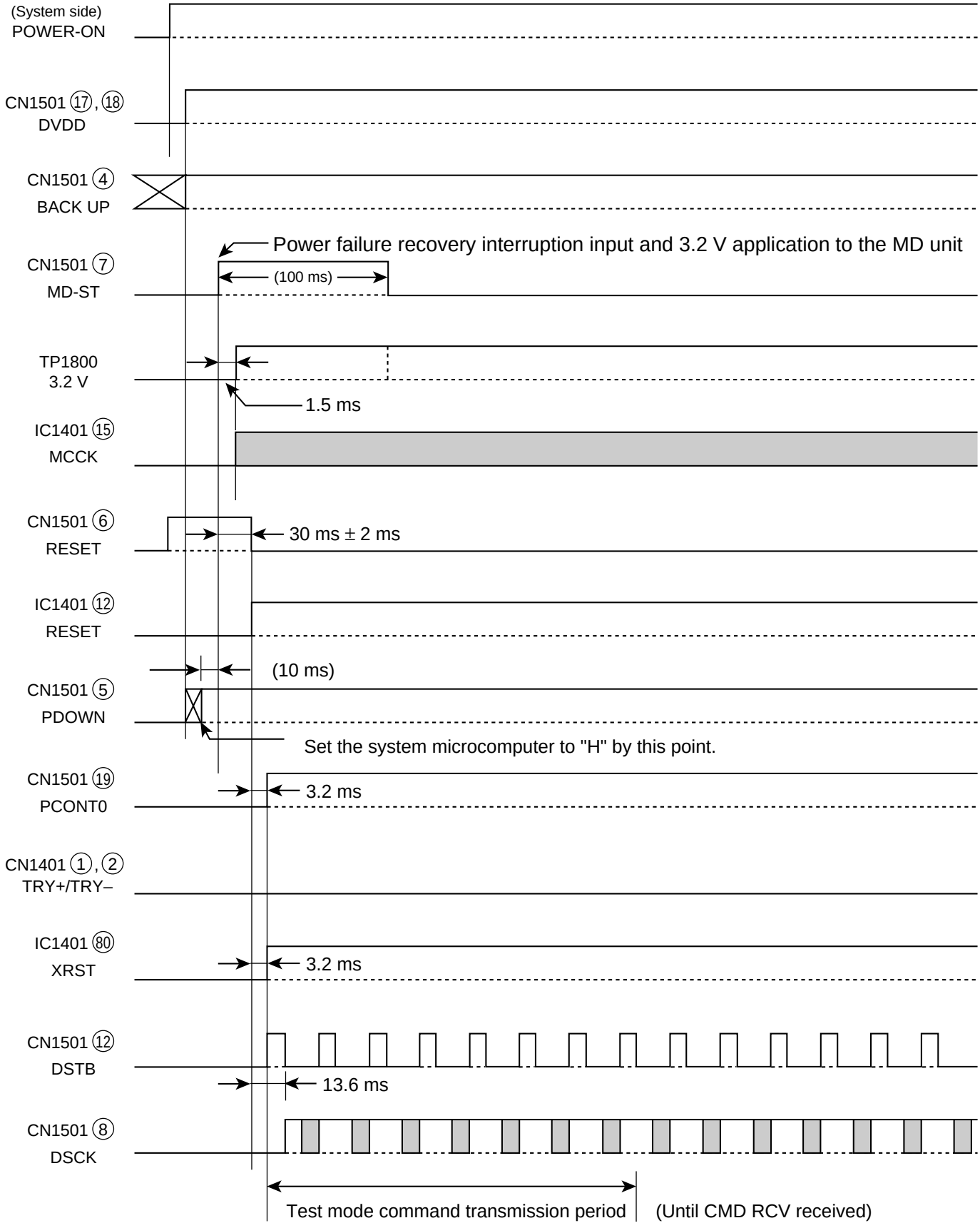
Item indication	Setting
COK ○○	58H
FAT ○○	C0H
TAT ○○	3EH
CAT ○○	40H
FAB ○○	64H
STR ○○	0BH
SFS ○○	0DH
STC ○○	0DH

REC bit setting

Item indication	Setting
SP_WR50 ○○	C0H
SP_WR56 ○○	FEH
SP_WR44 ○○	00H
SP_WR53 ○○	16H
LP2WR50 ○○	80H
LP2WR56 ○○	20H
LP2WR44 ○○	80H
LP2WR53 ○○	00H
LP4WR50 ○○	BFH
LP4WR56 ○○	02H
LP4WR44 ○○	80H
LP4WR53 ○○	00H
RVD ○○	01H

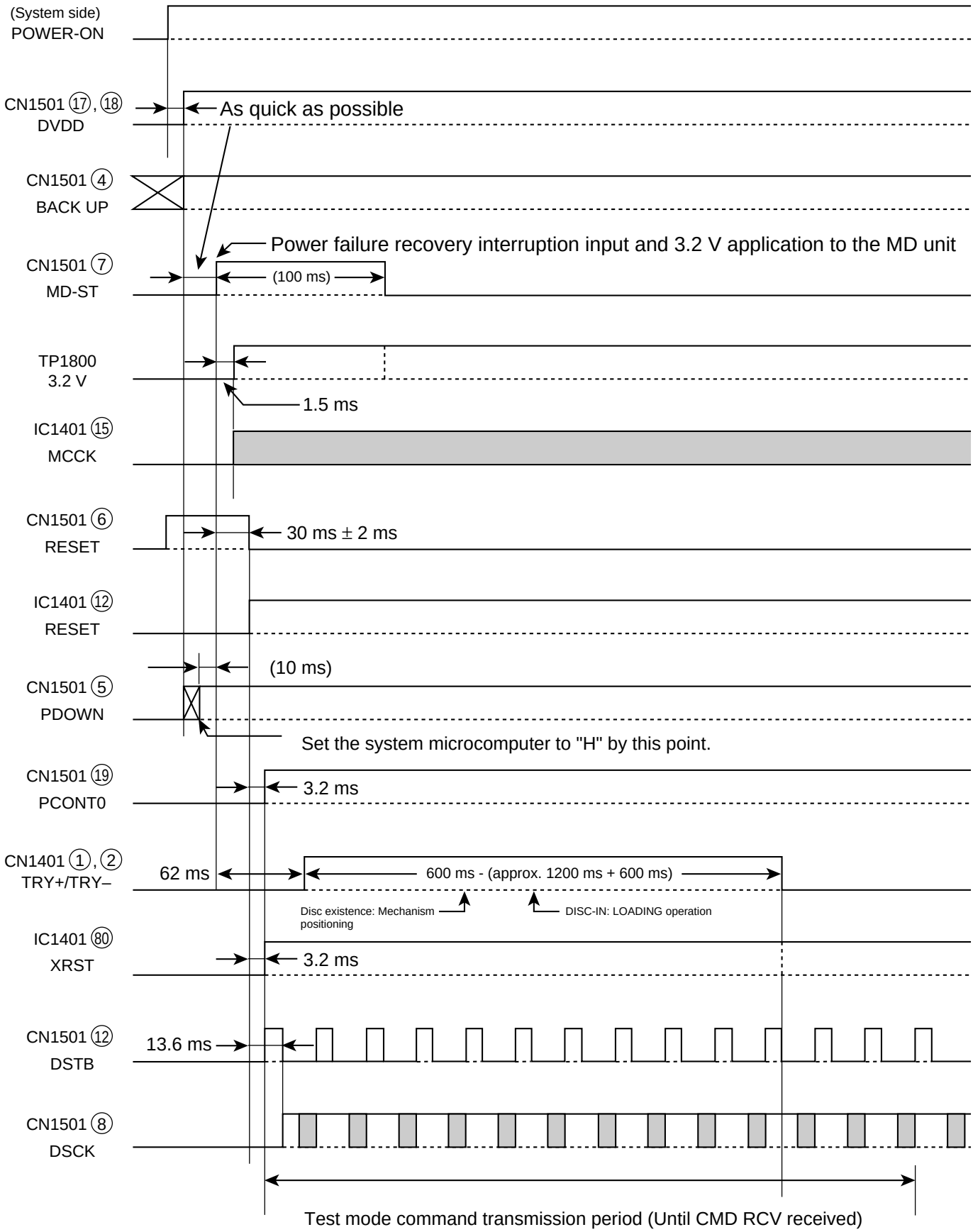
MD power ON time chart

Power-on sequence for the MD unit (when resetting or starting it ① : no disc)



MD-E9000H

Power-on sequence for the MD unit (when resetting or starting it ② : DISC IN or disc existence)



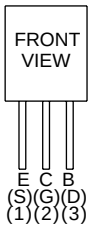
NOTES ON SCHEMATIC DIAGRAM

- Resistor:
  To differentiate the units of resistors, such symbol as K and M are used: the symbol K means 1000 ohm and the symbol M means 1000 kohm and the resistor without any symbol is ohm-type resistor. Besides, the one with “Fusible” is a fuse type.
- Capacitor:
  To indicate the unit of capacitor, a symbol P is used: this symbol P means pico-farad and the unit of the capacitor without such a symbol is microfarad. As to electrolytic capacitor, the expression “capacitance/withstand voltage” is used.
  (CH), (TH), (RH), (UJ): Temperature compensation
  (ML): Mylar type
  (P.P.): Polypropylene type
- Schematic diagram and Wiring Side of P.W.Board for this model are subject to change for improvement without prior notice.
- The indicated voltage in each section is the one measured by Digital Multimeter between such a section and the chassis with no signal given.
  1. In the tuner section,
     indicates AM
     indicates FM stereo
  2. In the main section, a tape is being played back.
  3. In the deck section, a tape is being played back.
     ( ) indicates the record state.
  4. In the power section, a tape is being played back.
  5. In the CD section, the CD is stopped.
- Parts marked with “ ⚠ ” (⊏ ═ ═ ═ ⊐) are important for maintaining the safety of the set. Be sure to replace these parts with specified ones for maintaining the safety and performance of the set.

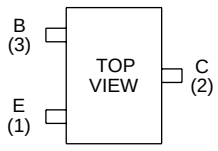
REF. NO	DESCRIPTION	POSITION
SW4	PICKUP IN	ON—OFF
SW701	VOLUME DOWN	ON—OFF
SW702	VOLUME UP	ON—OFF
SW703	CD PLAY/PAUSE	ON—OFF
SW704	CD STOP	ON—OFF
SW705	FF/SKIP UP/PRESET UP	ON—OFF
SW706	REW/SKIP DOWN/PRESET DOWN	ON—OFF
SW707	MD STOP	ON—OFF
SW708	MD PLAY/PAUSE	ON—OFF
SW709	MEMORY/ENTER	ON—OFF
SW710	DISPLAY (DEMO)	ON—OFF
SW711	X-BASS	ON—OFF
SW712	EQUALIZER	ON—OFF
SW713	AUX	ON—OFF
SW714	TUNER (BAND)	ON—OFF

REF. NO	DESCRIPTION	POSITION
SW715	CD OPEN/CLOSE	ON—OFF
SW716	ON/STAND-BY	ON—OFF
SW717	MD EJECT	ON—OFF
SW718	LP4	ON—OFF
SW719	LP2	ON—OFF
SW720	SP	ON—OFF
SW721	NORMAL	ON—OFF
SW722	HIGH	ON—OFF
SW723	MD REC	ON—OFF
SW724	OPEN/CLOSE	ON—OFF
SW1930	WRITE PRO	ON—OFF
SW1932	LOADING	ON—OFF
SW1933	RECORD	ON—OFF
SW1934	PLAY	ON—OFF
SW1936	LEAD IN	ON—OFF

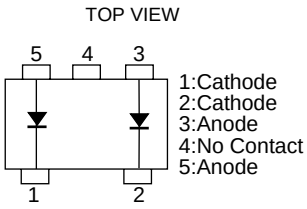
TYPES OF TRANSISTOR AND LED



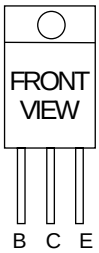
2SC380 O
KTA1266 GR
KTA1271 Y
KTC3199 GR
KTC3203 Y
KRC102 M
KRC107 M
KRC111 M



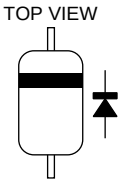
2SD601 AR
UN2214



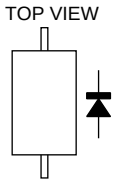
SBE803



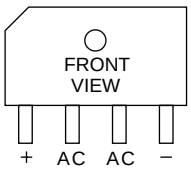
KTC2026



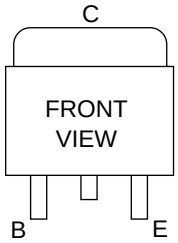
DS1SS133



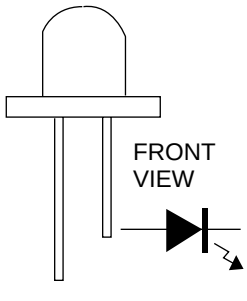
DS1N404S



TS6B04GM



2SB1205



4204SRT7
LNG901CF

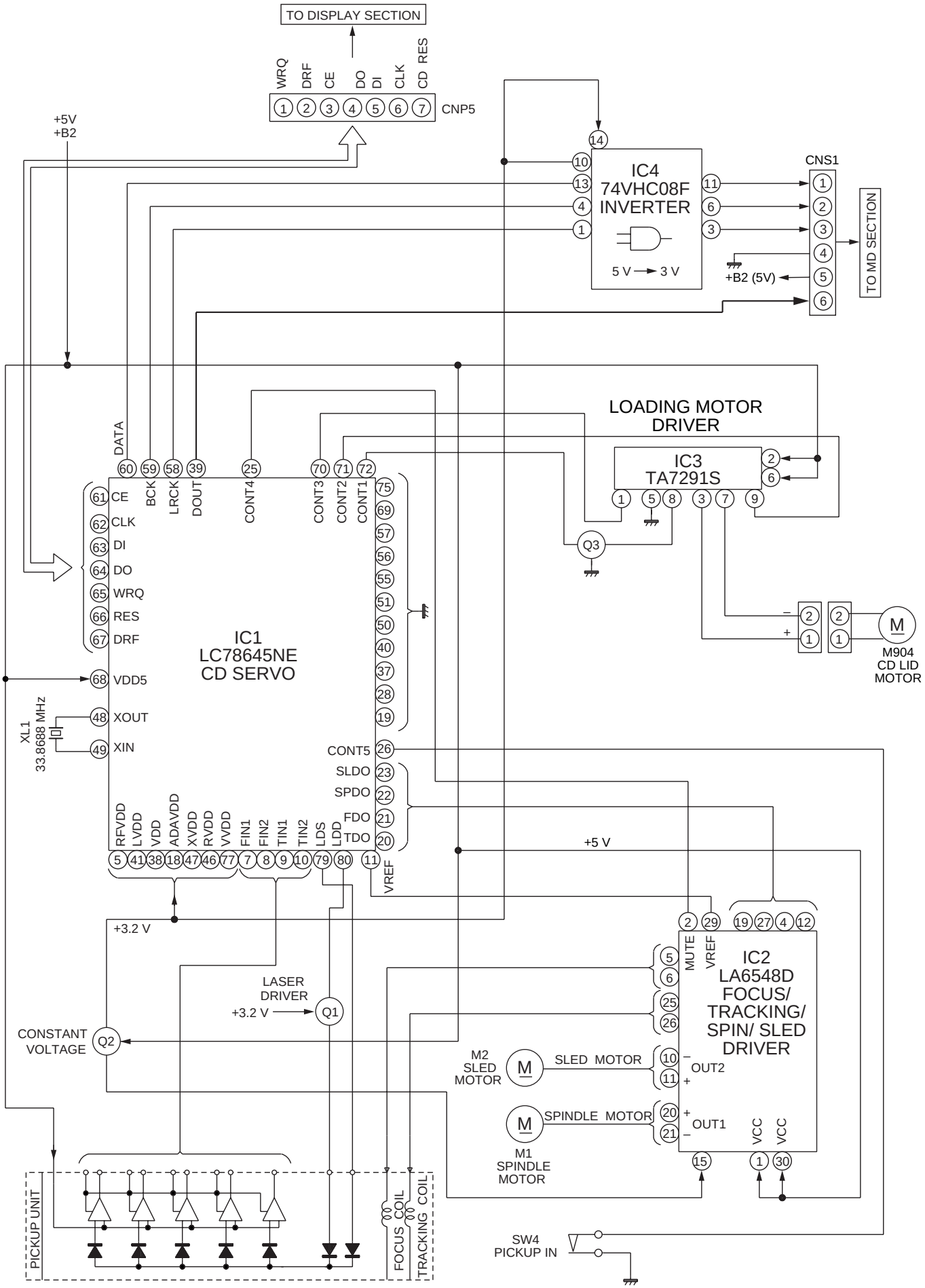


Figure 38 BLOCK DIAGRAM (1/4)

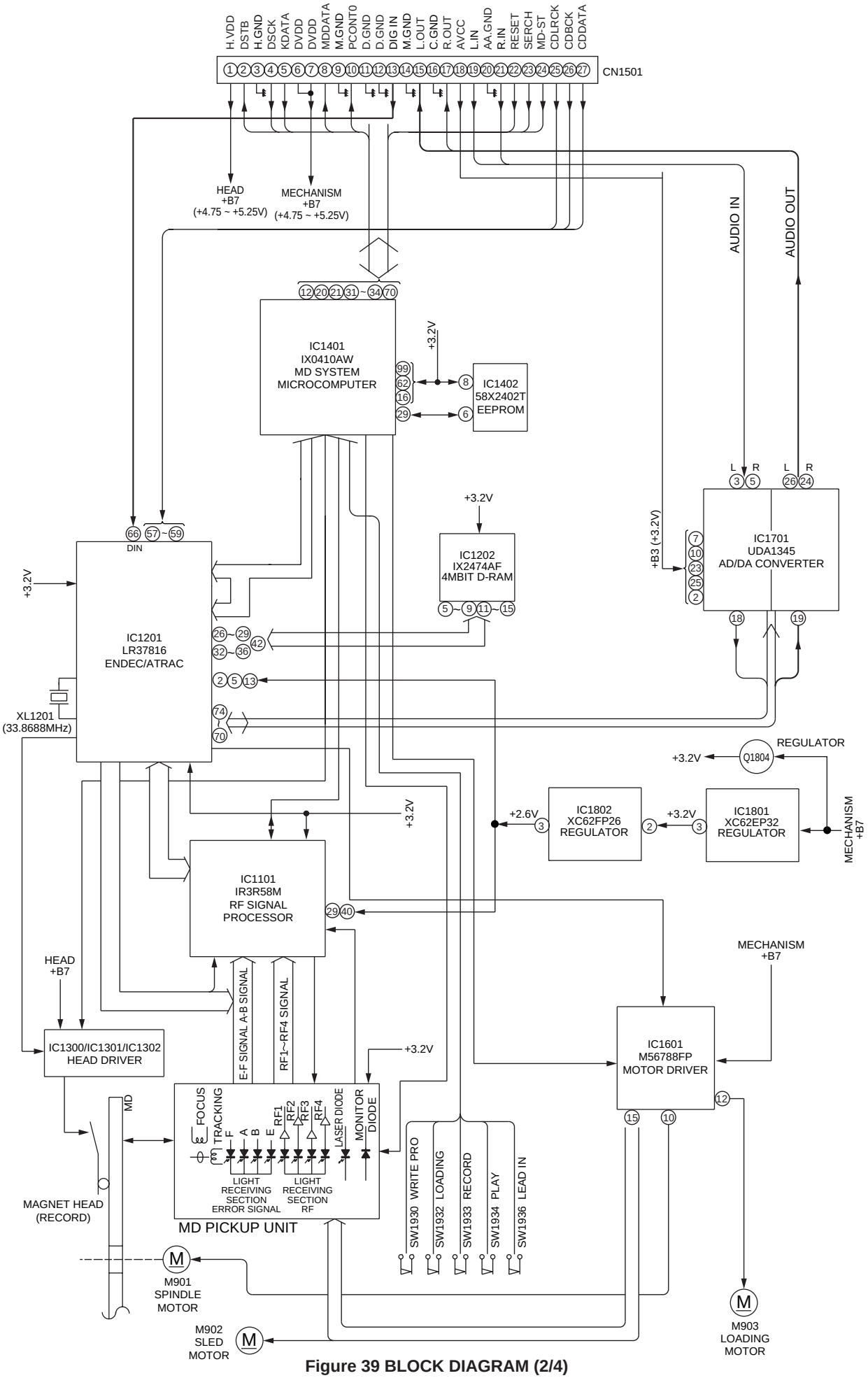


Figure 39 BLOCK DIAGRAM (2/4)

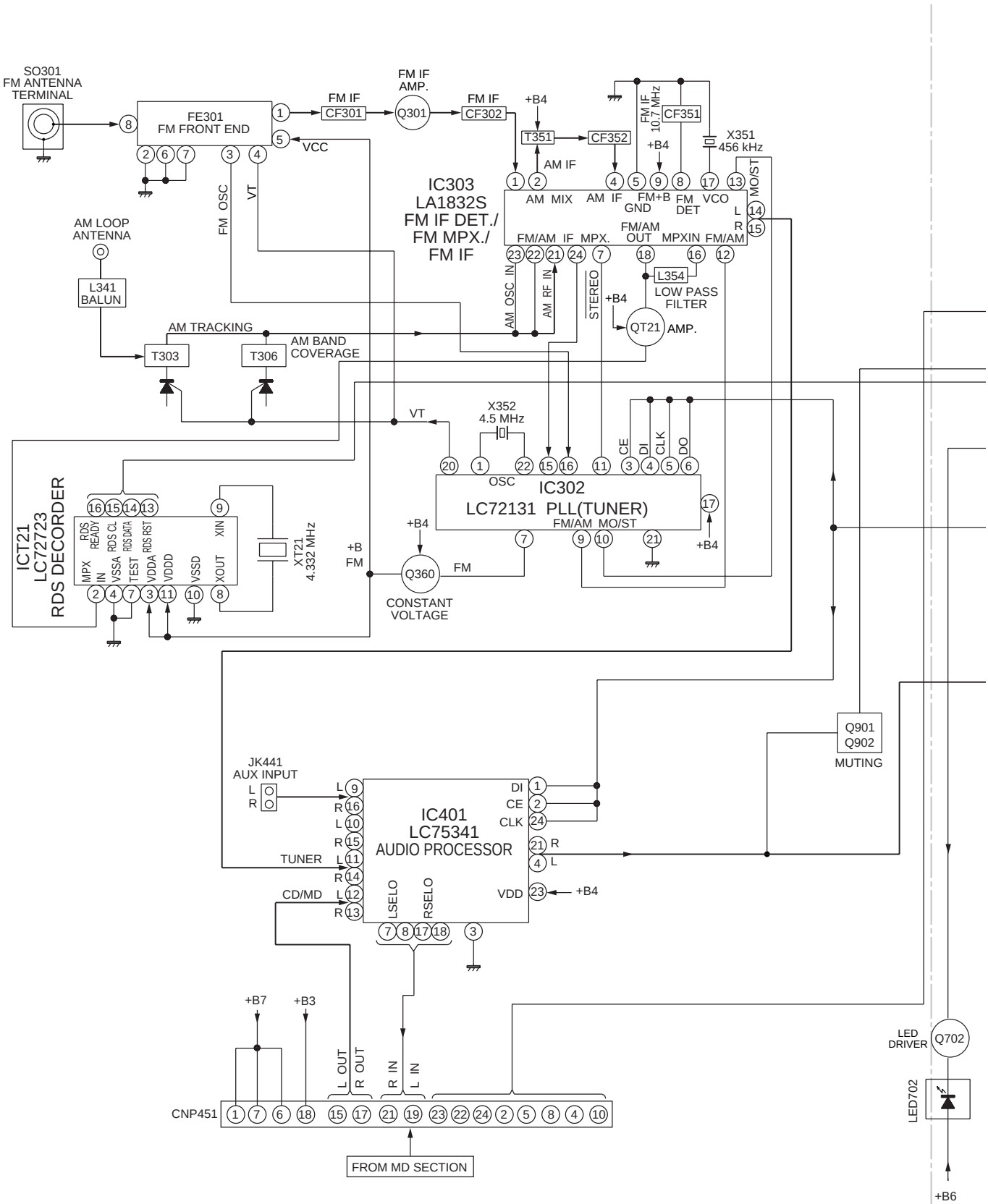


Figure 40 BLOCK DIAGRAM (3/4)

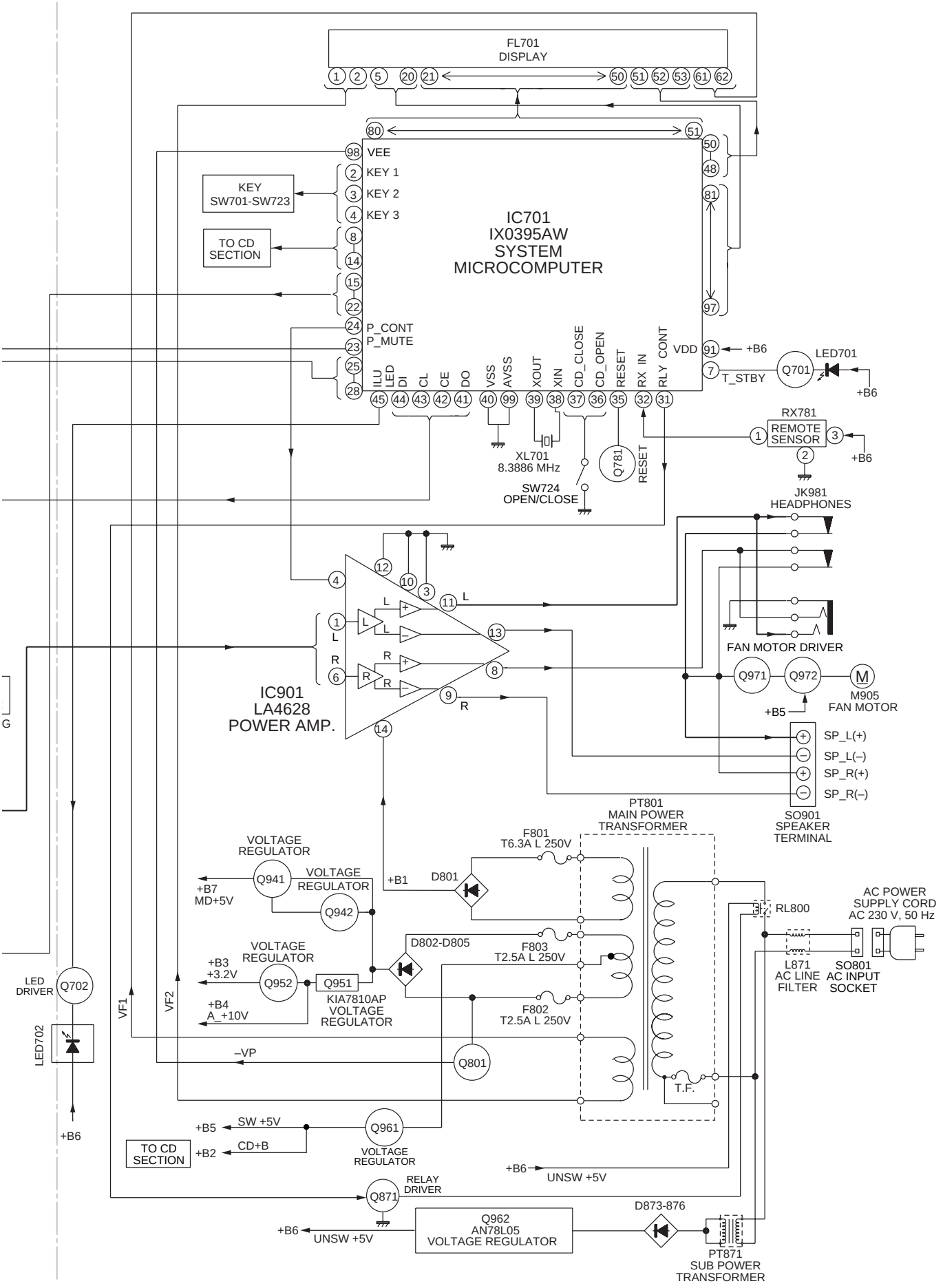


Figure 41 BLOCK DIAGRAM (4/4)

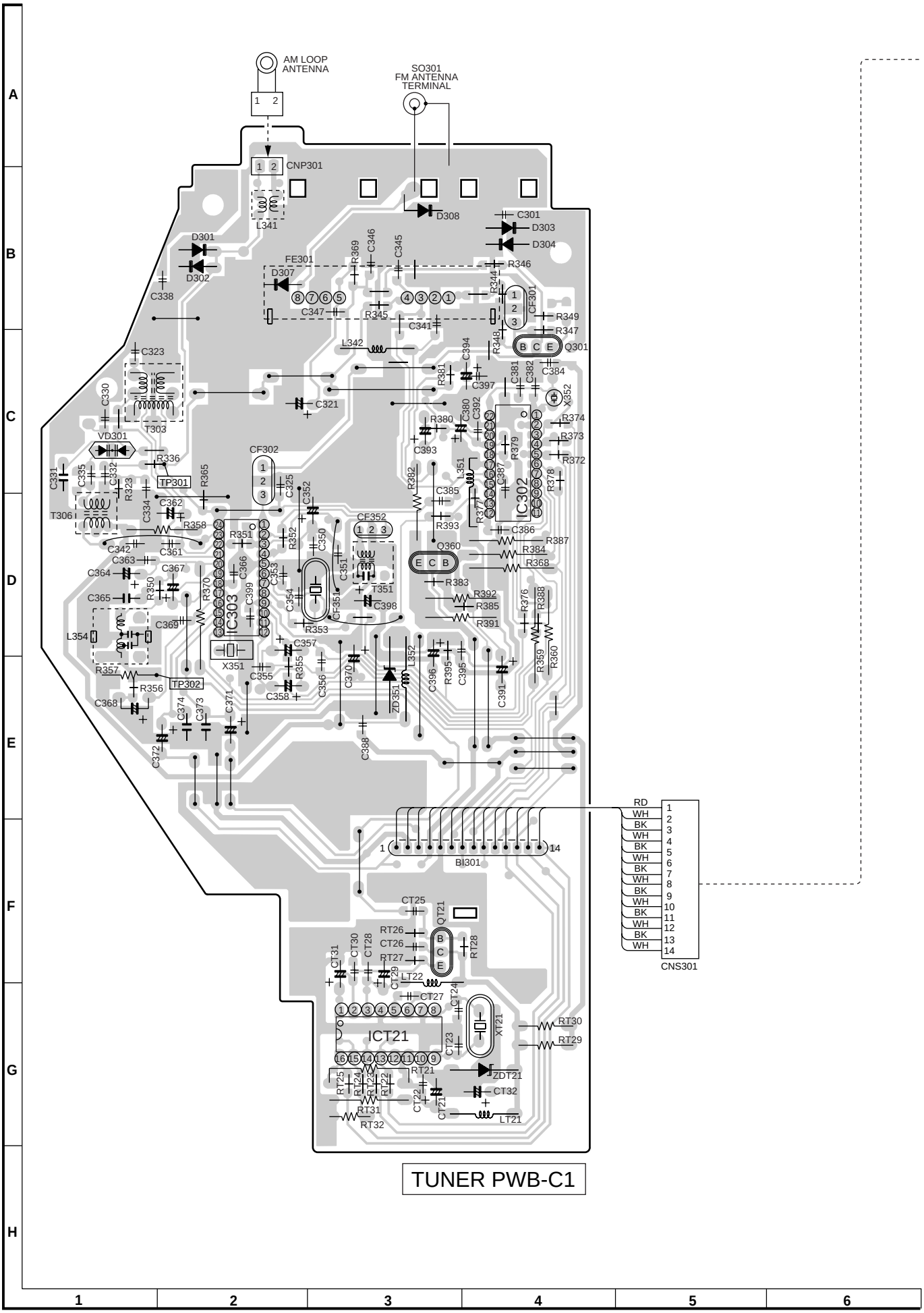
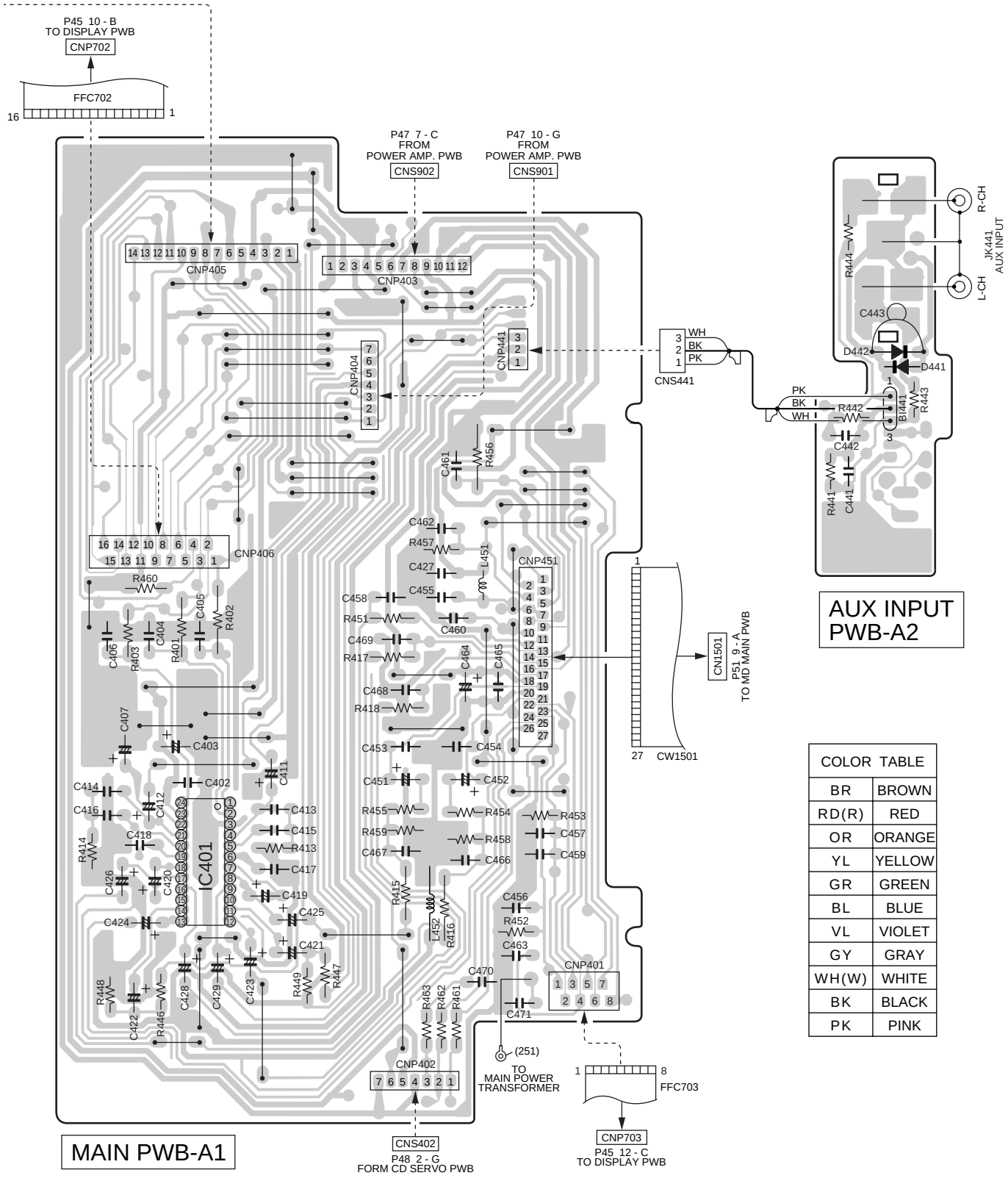


Figure 42 WIRING SIDE OF P.W.BOARD (1/10)



COLOR TABLE	
BR	BROWN
RD(R)	RED
OR	ORANGE
YL	YELLOW
GR	GREEN
BL	BLUE
VL	VIOLET
GY	GRAY
WH(W)	WHITE
BK	BLACK
PK	PINK

7	8	9	10	11	12

Figure 43 WIRING SIDE OF P.W.BOARD (2/10)

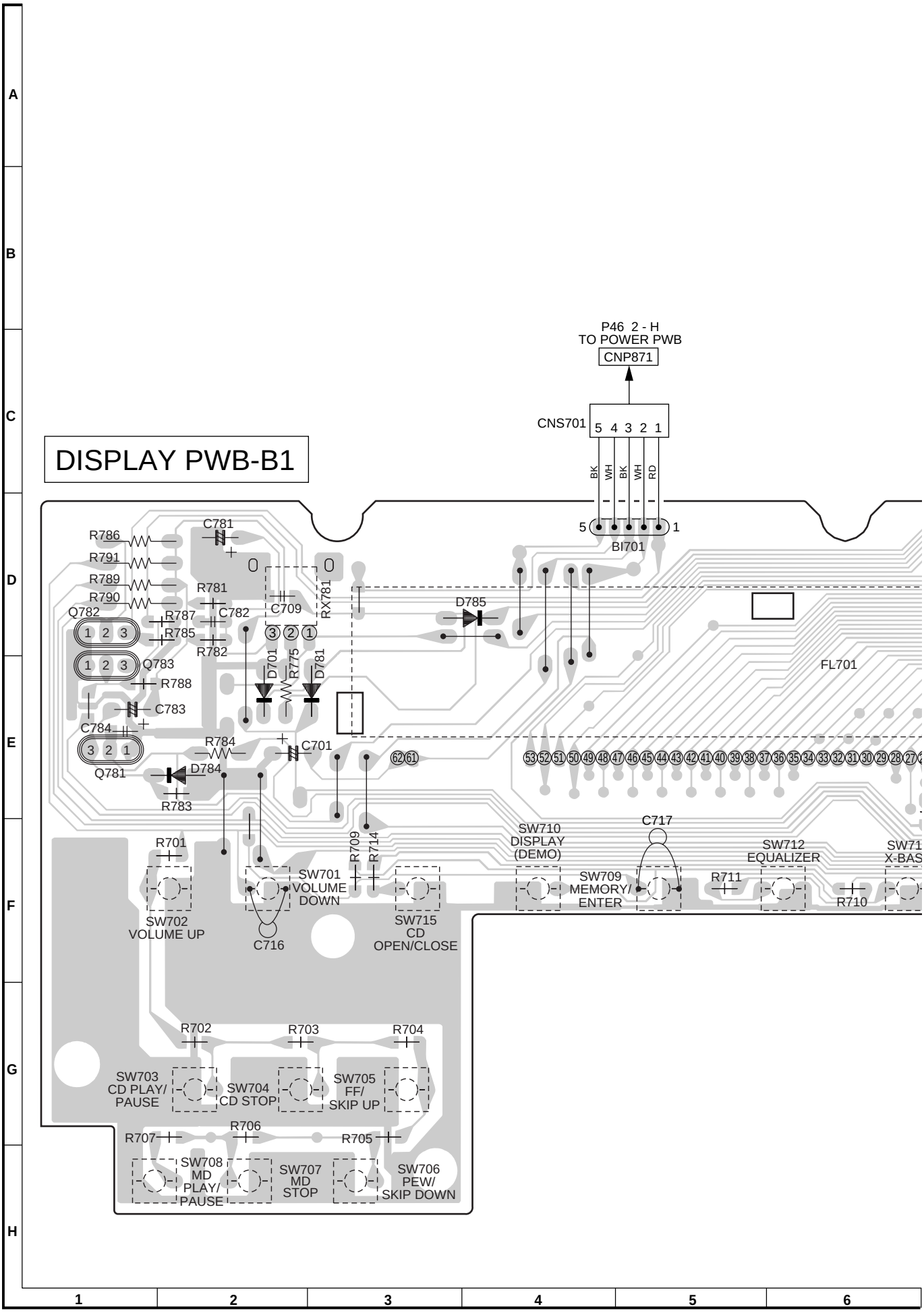
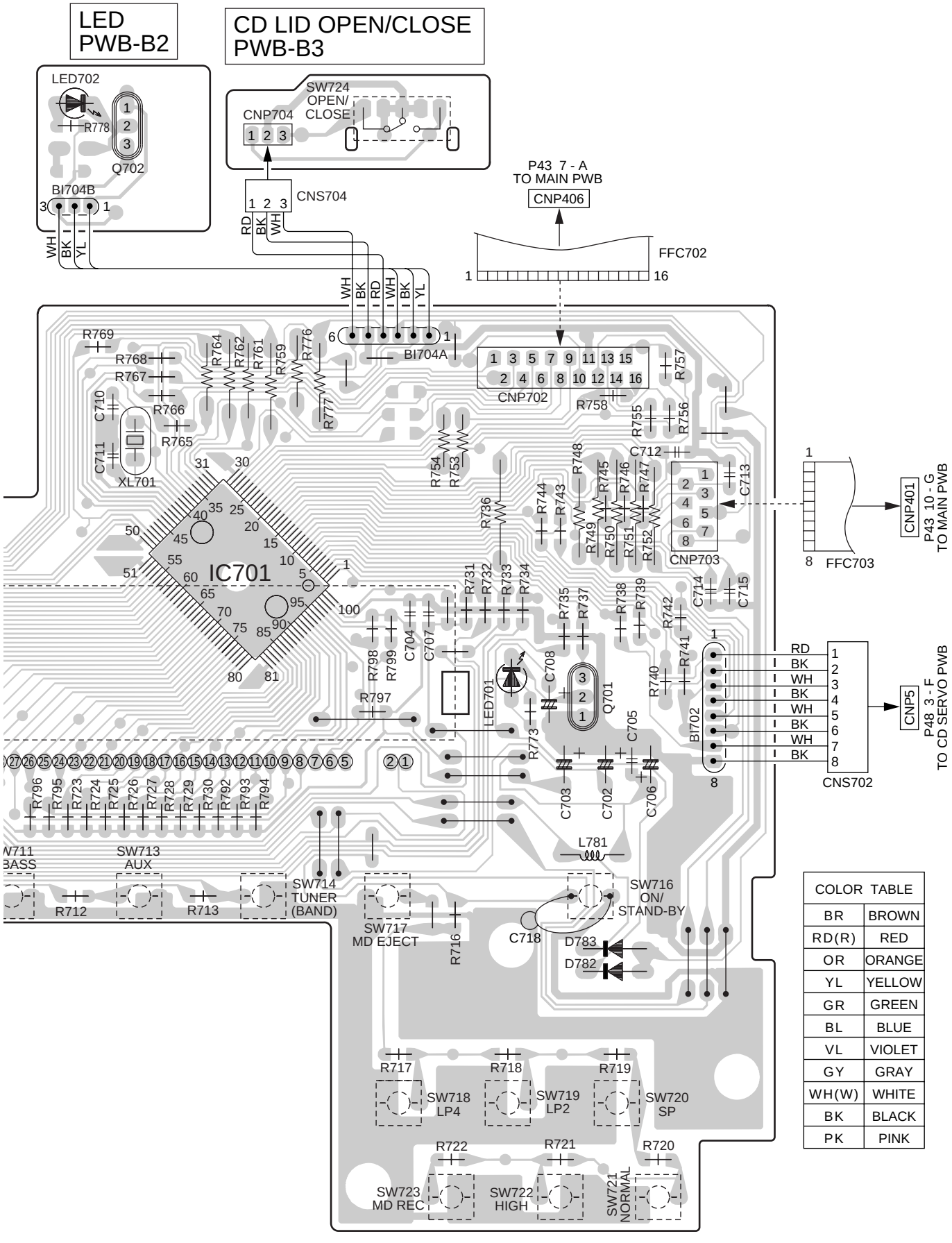


Figure 44 WIRING SIDE OF P.W.BOARD (3/10)



7	8	9	10	11	12

Figure 45 WIRING SIDE OF P.W.BOARD (4/10)

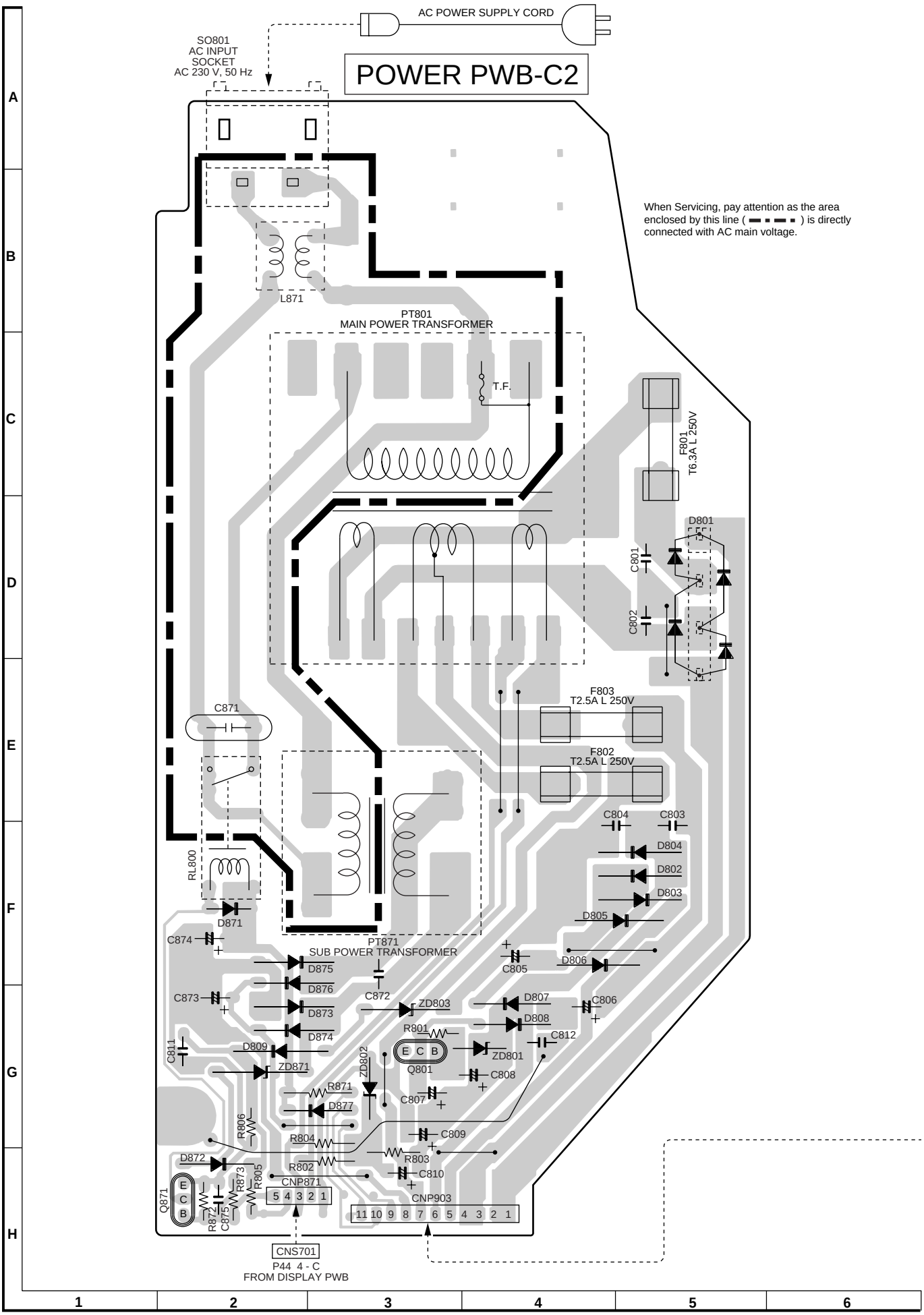
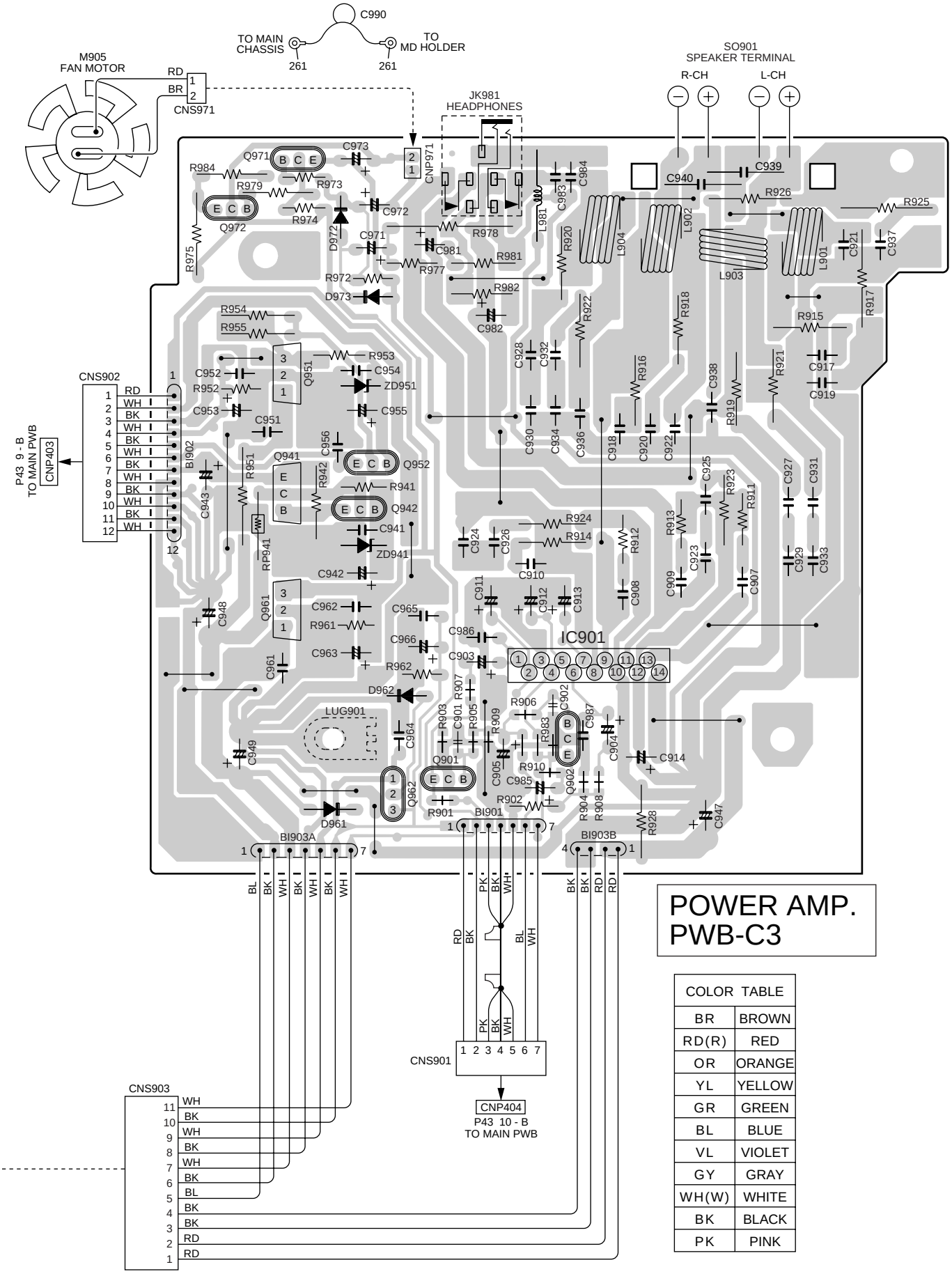


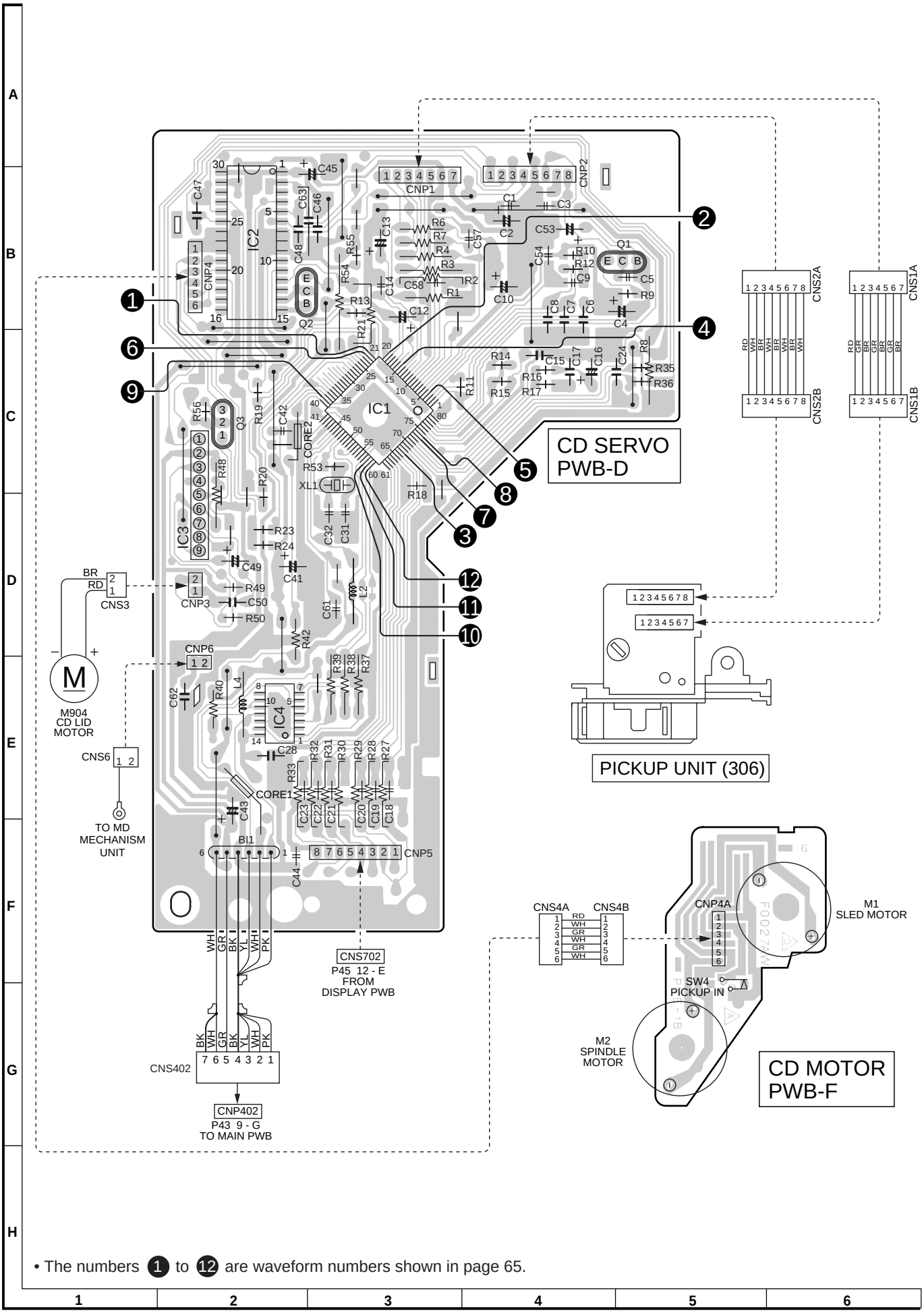
Figure 46 WIRING SIDE OF P.W.BOARD (5/10)



COLOR TABLE	
BR	BROWN
RD(R)	RED
OR	ORANGE
YL	YELLOW
GR	GREEN
BL	BLUE
VL	VIOLET
GY	GRAY
WH(W)	WHITE
BK	BLACK
PK	PINK

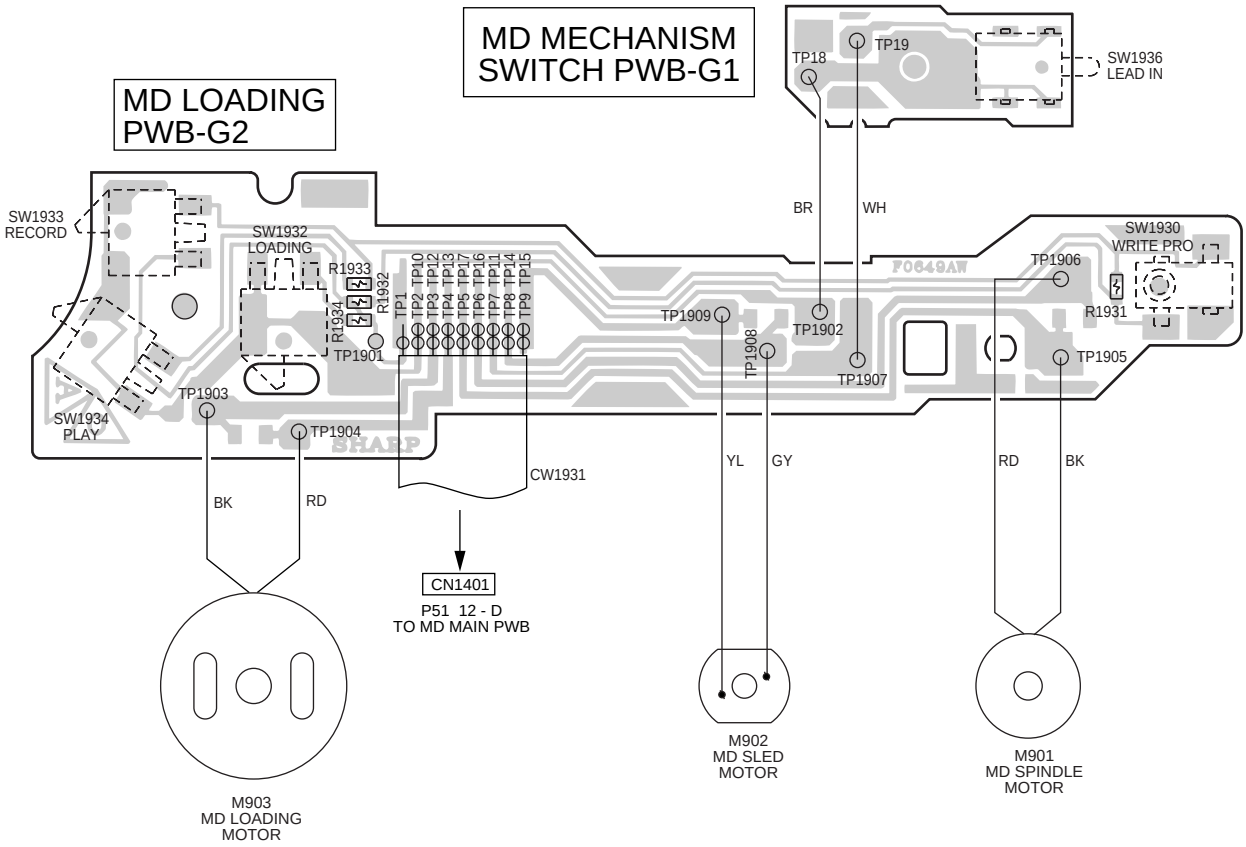
7	8	9	10	11	12

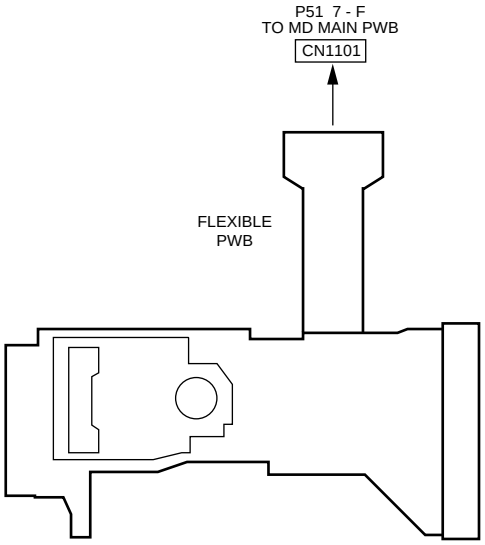
Figure 47 WIRING SIDE OF P.W.BOARD (6/10)



• The numbers ❶ to ⓬ are waveform numbers shown in page 65.

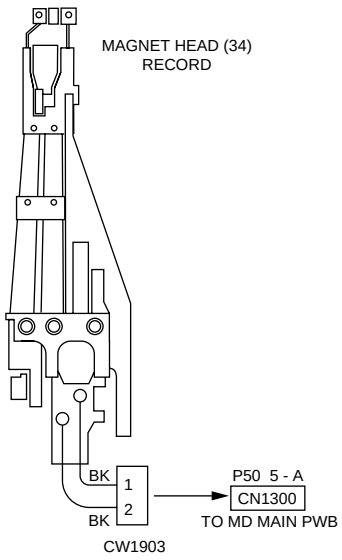
Figure 48 WIRING SIDE OF P.W.BOARD (7/10)





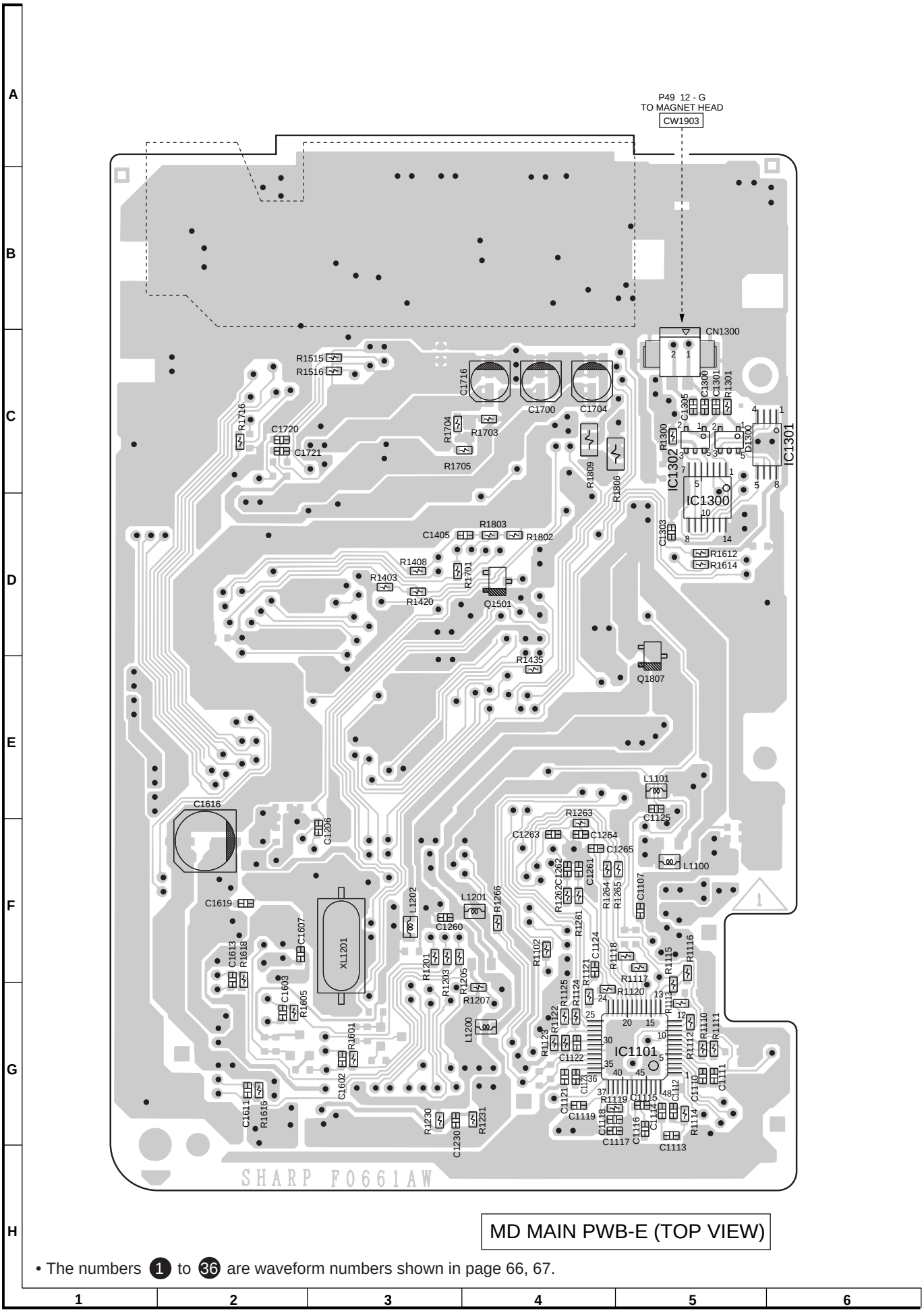
MD PICKUP UNIT(35)

COLOR TABLE	
BR	BROWN
RD(R)	RED
OR	ORANGE
YL	YELLOW
GR	GREEN
BL	BLUE
VL	VIOLET
GY	GRAY
WH(W)	WHITE
BK	BLACK
PK	PINK



7	8	9	10	11	12

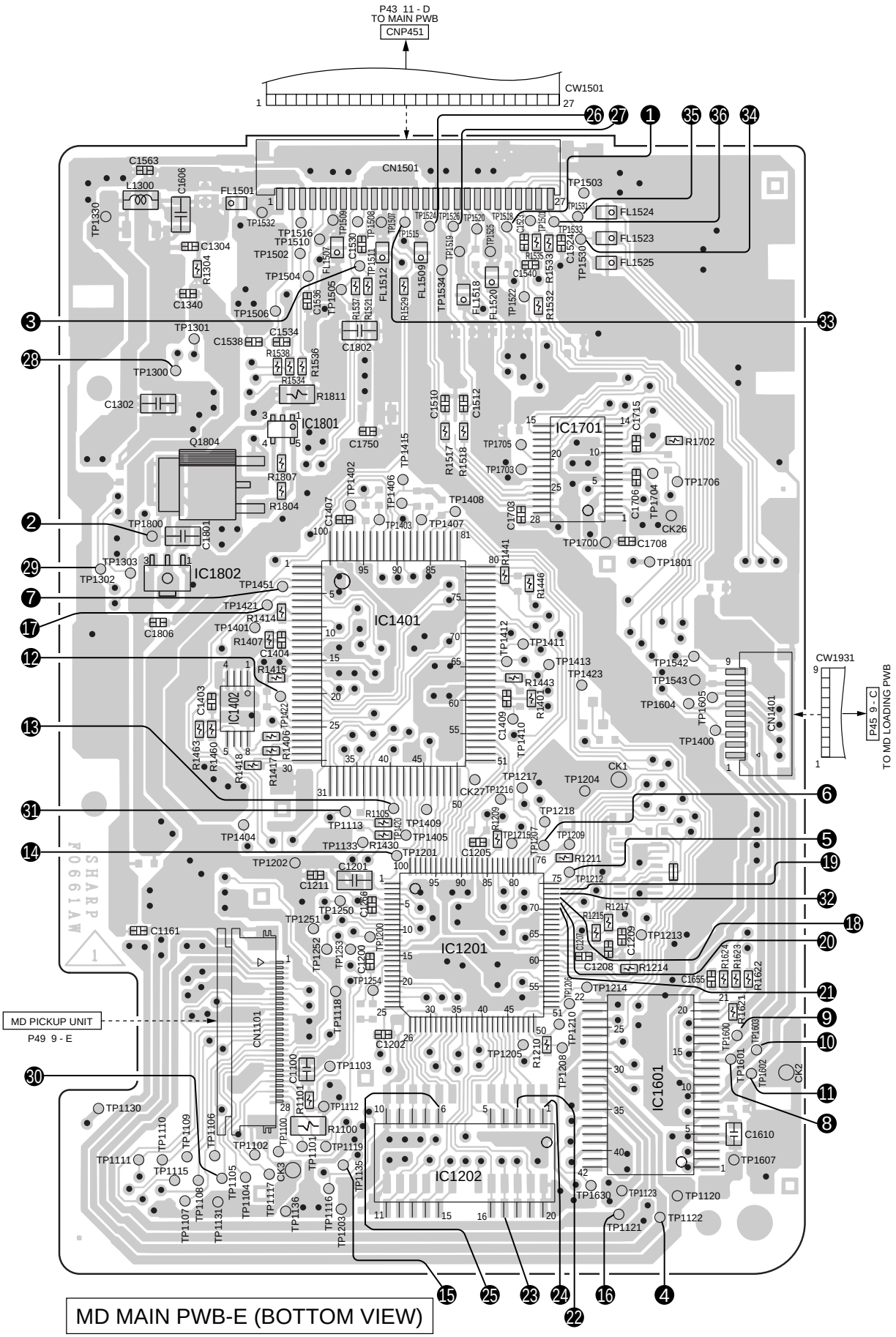
Figure 49 WIRING SIDE OF P.W.BOARD (8/10)



MD MAIN PWB-E (TOP VIEW)

• The numbers ❶ to ㊱ are waveform numbers shown in page 66, 67.

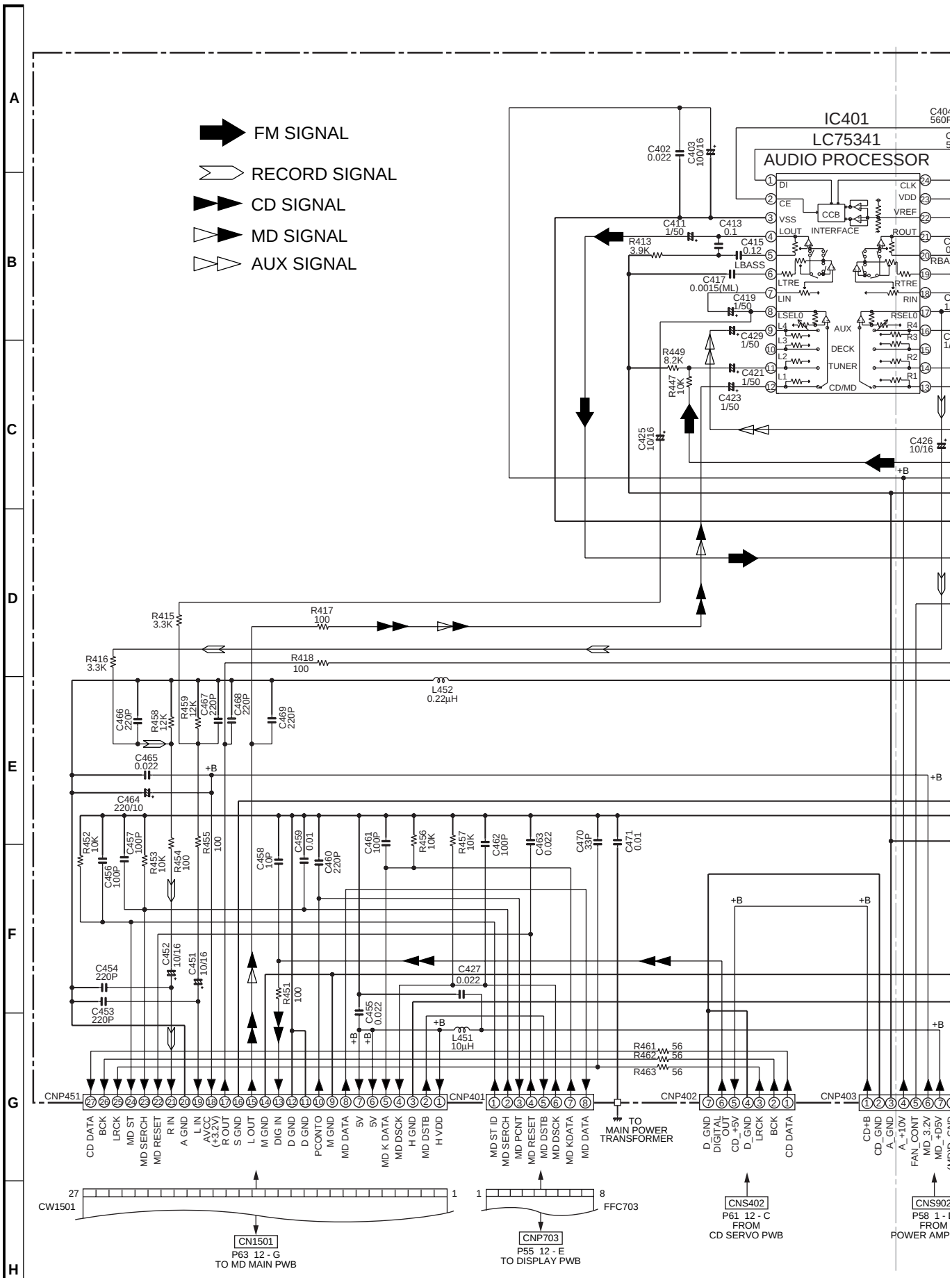
Figure 50 WIRING SIDE OF P.W.BOARD (9/10)



● : Through-hole where the top and bottom patterns are connected.

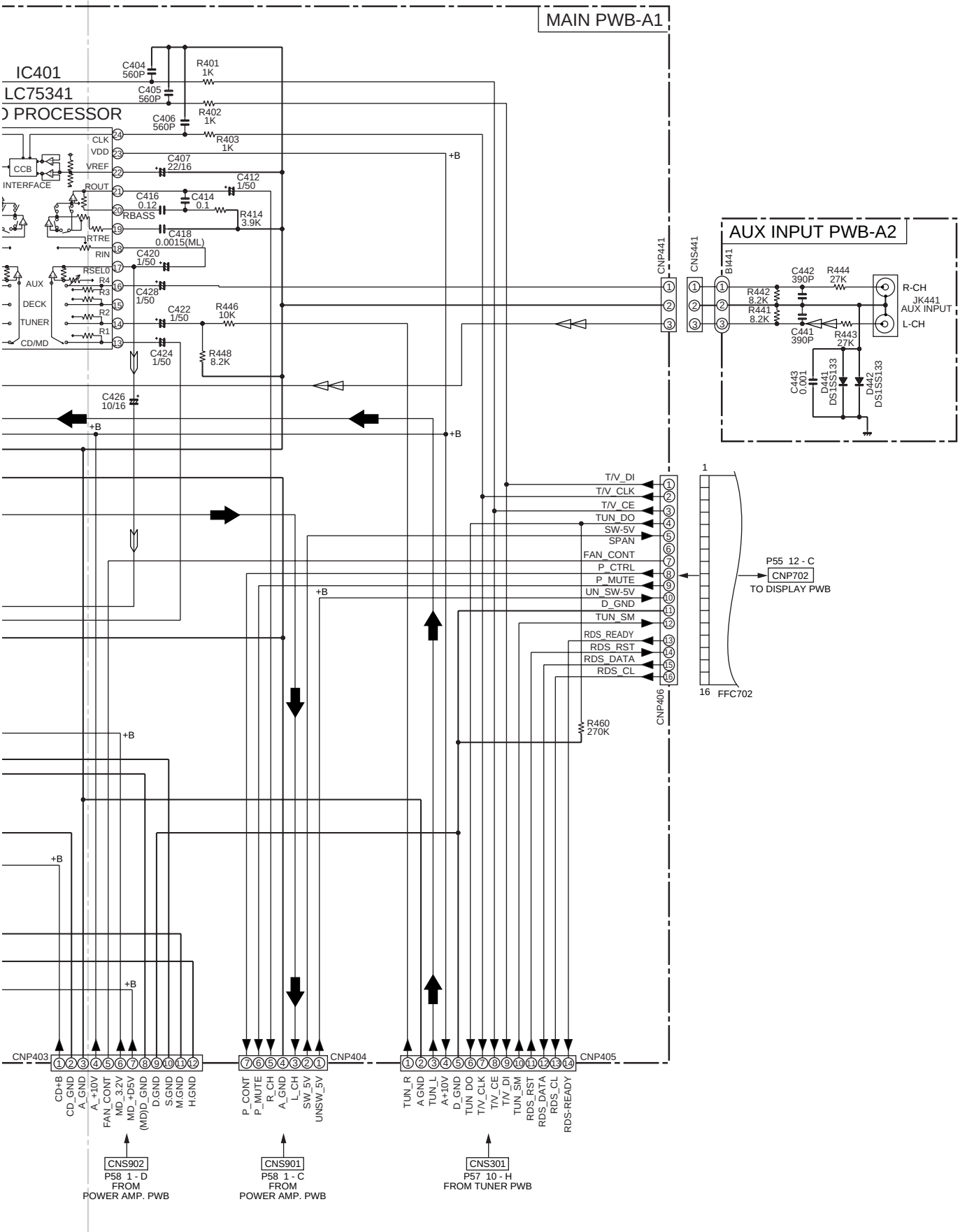
7	8	9	10	11	12

Figure 51 WIRING SIDE OF P.W.BOARD (10/10)



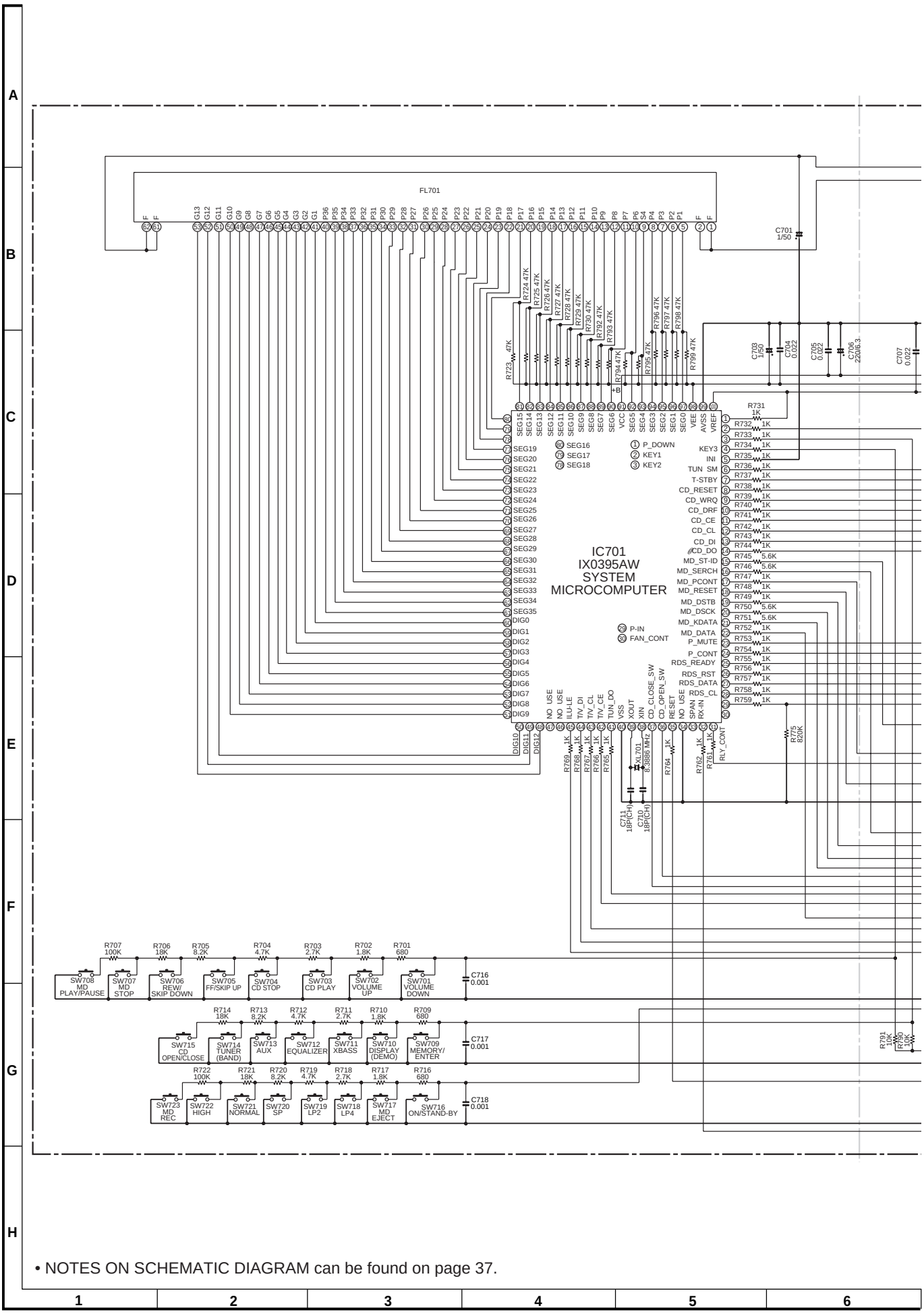
• NOTES ON SCHEMATIC DIAGRAM can be found on page 37.

Figure 52 SCHEMATIC DIAGRAM (1/12)



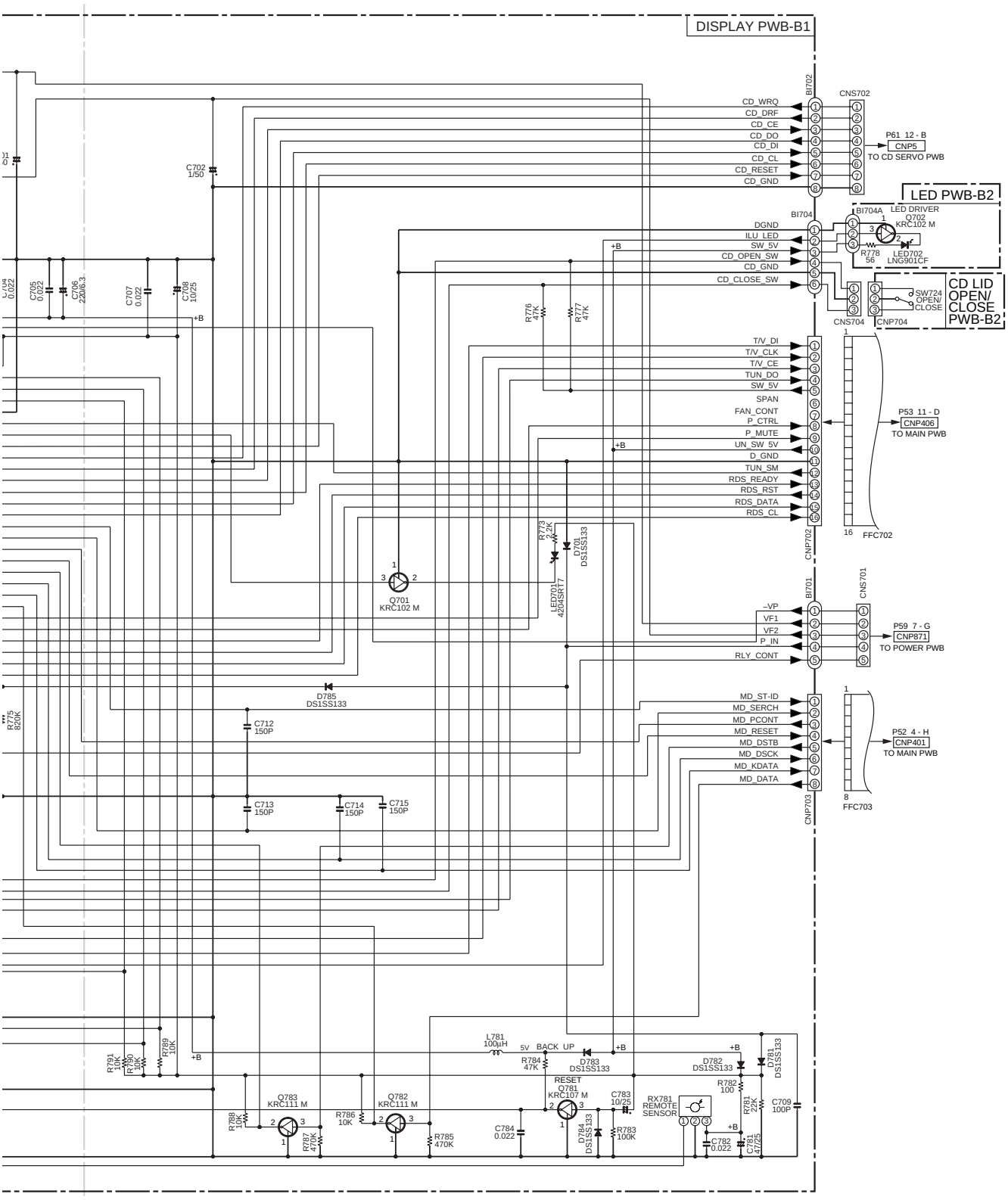
7	8	9	10	11	12

Figure 53 SCHEMATIC DIAGRAM (2/12)



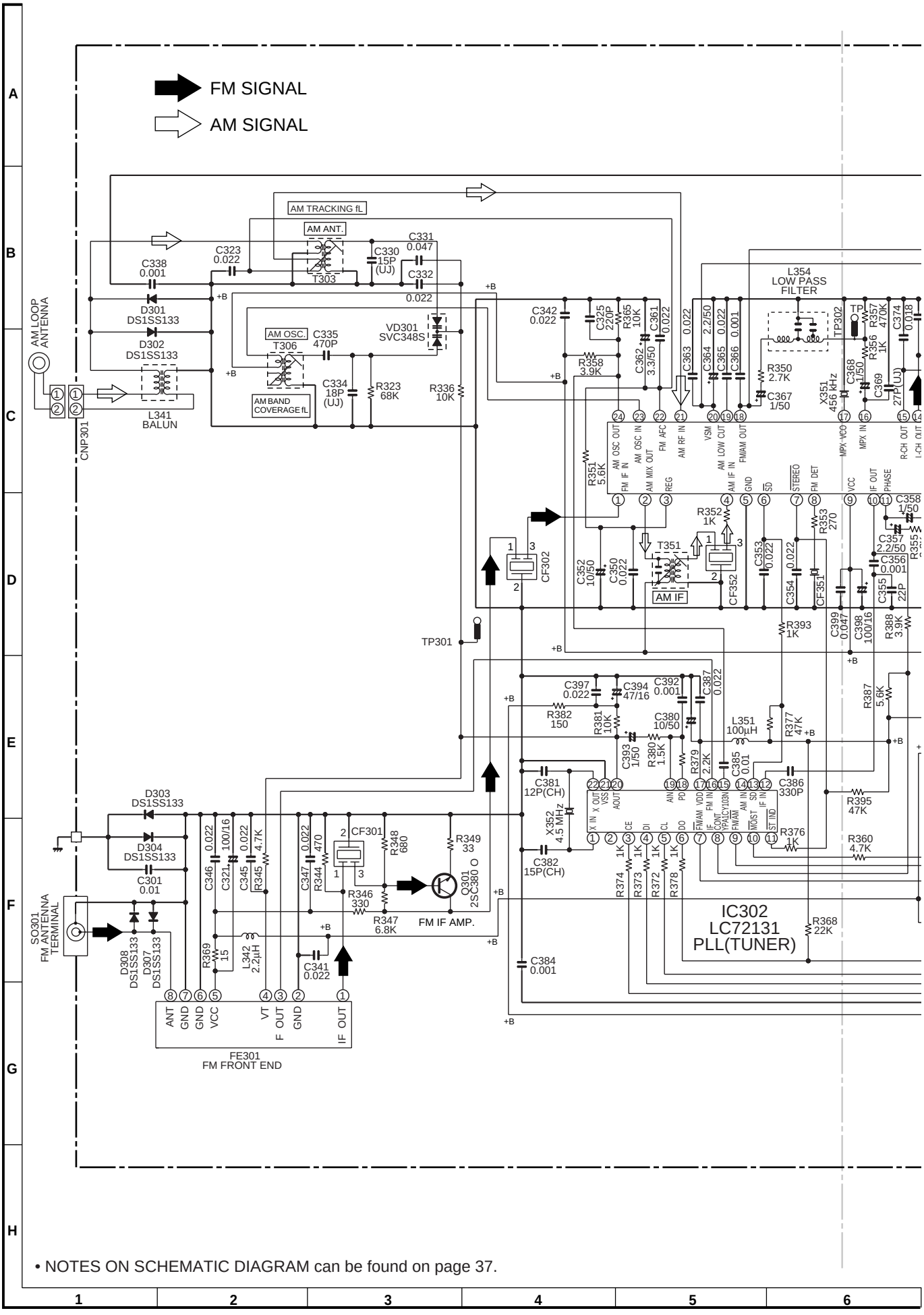
• NOTES ON SCHEMATIC DIAGRAM can be found on page 37.

Figure 54 SCHEMATIC DIAGRAM (3/12)



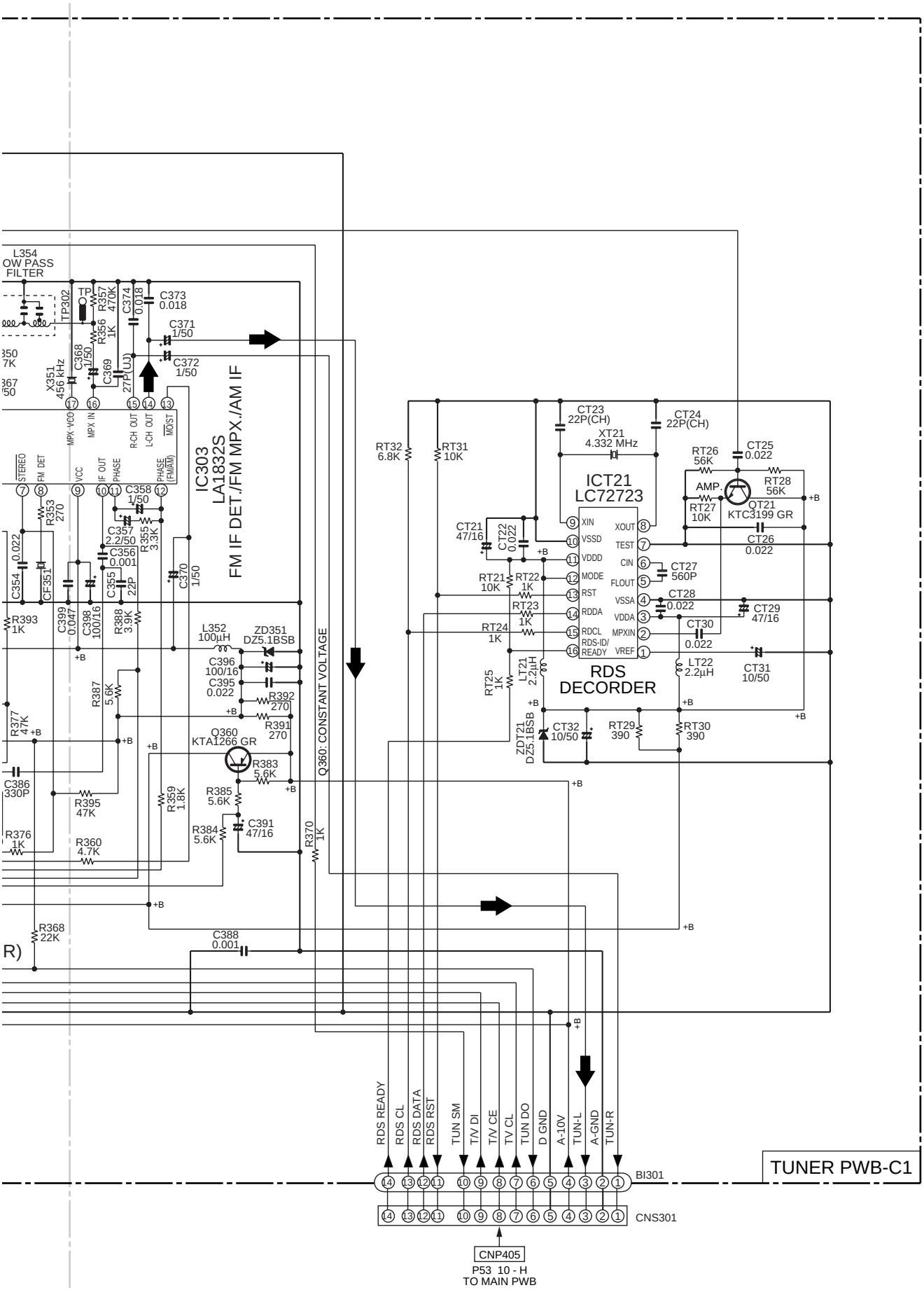
7	8	9	10	11	12

Figure 55 SCHEMATIC DIAGRAM (4/12)



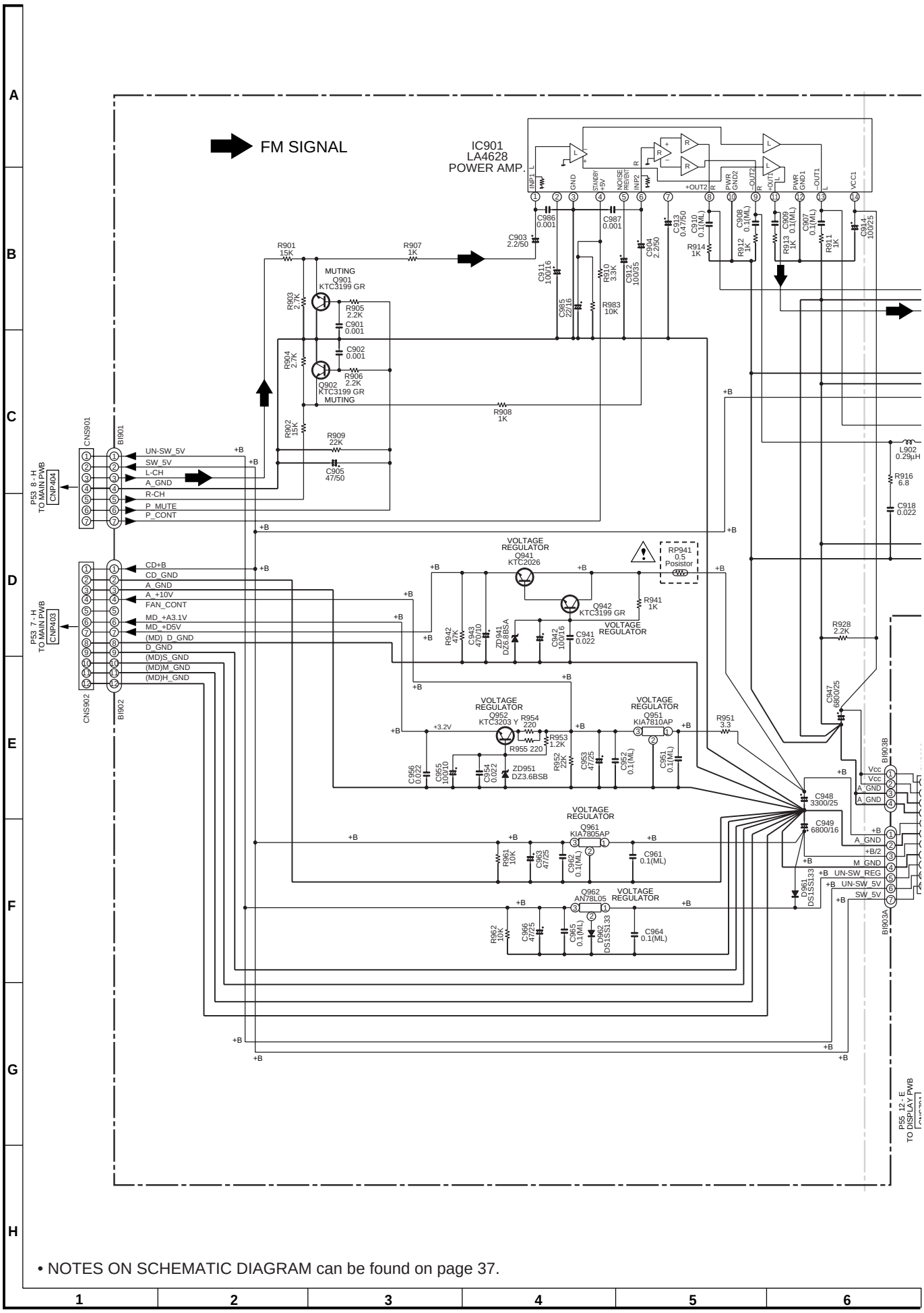
• NOTES ON SCHEMATIC DIAGRAM can be found on page 37.

Figure 56 SCHEMATIC DIAGRAM (5/12)



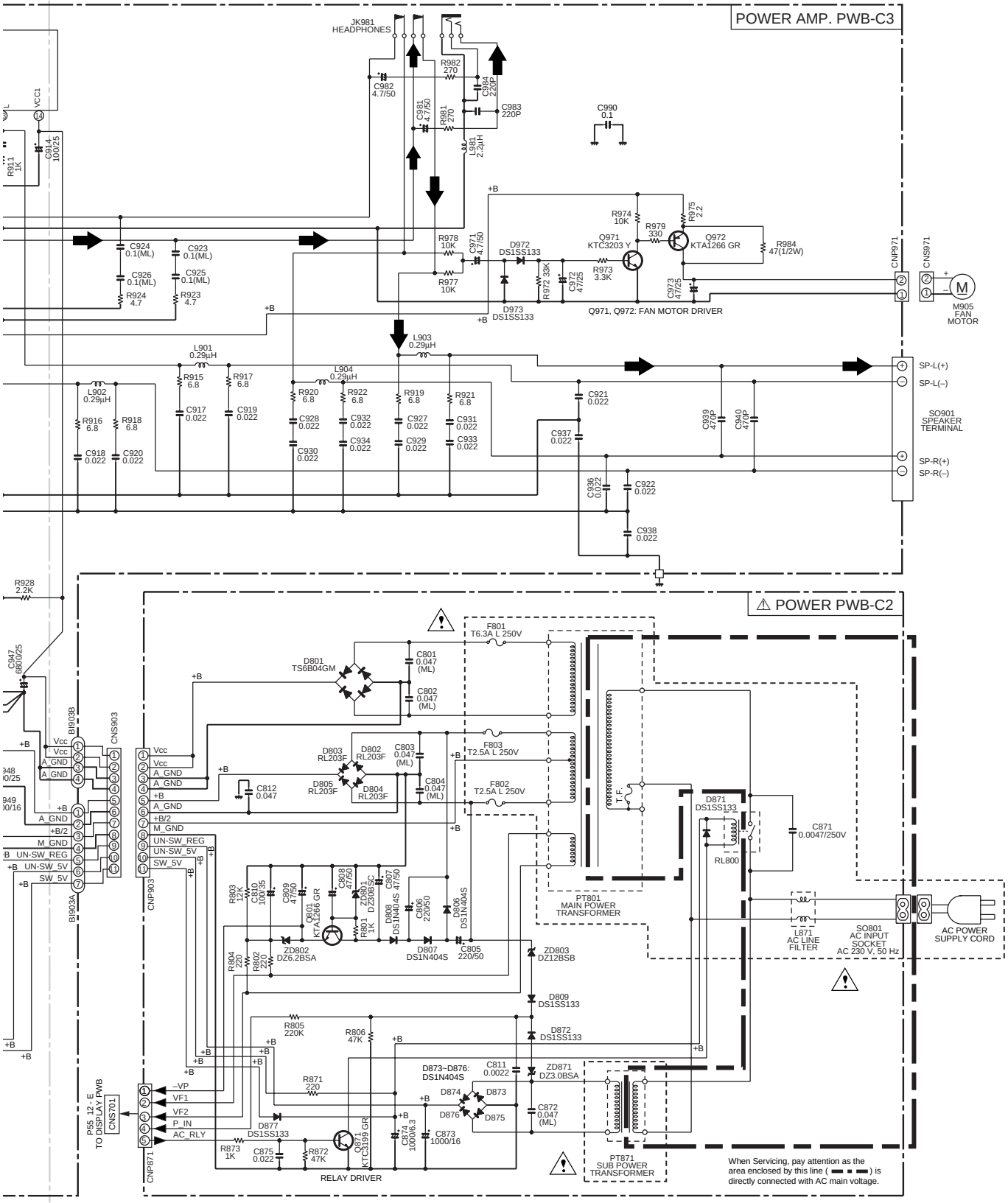
7	8	9	10	11	12

Figure 57 SCHEMATIC DIAGRAM (6/12)



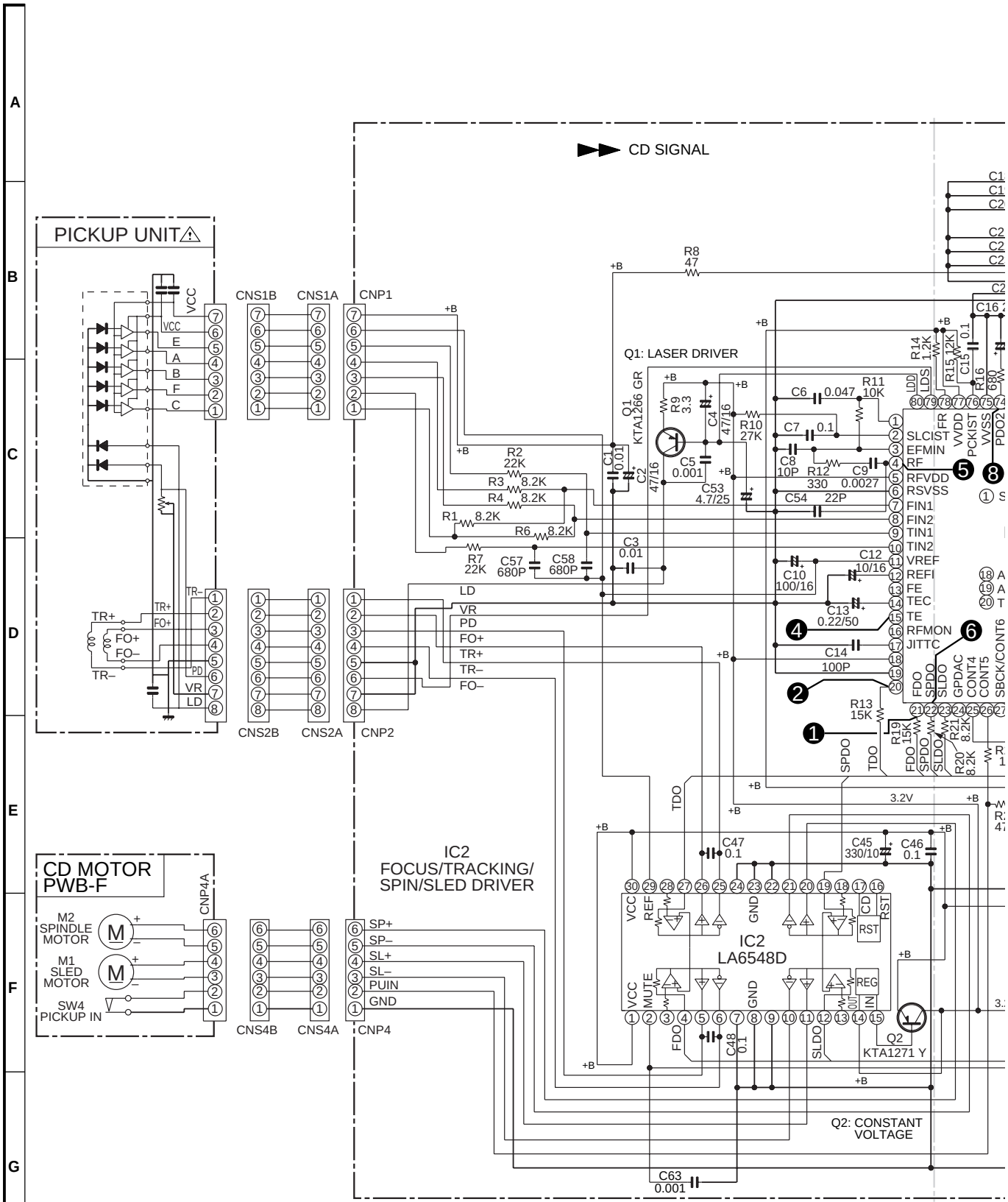
• NOTES ON SCHEMATIC DIAGRAM can be found on page 37.

Figure 58 SCHEMATIC DIAGRAM (7/12).


POWER AMP. PWB-C3
JK981 HEADPHONES
Q971, Q972: FAN MOTOR DRIVER
M905 FAN MOTOR
SP-L(+)
SP-L(–)
SP-R(+)
SP-R(–)
SO901 SPEAKER TERMINAL
⚠ POWER PWB-C2
F801 T6.3A L 250V
F803 T2.5A L 250V
F802 T2.5A L 250V
PT801 MAIN POWER TRANSFORMER
PT871 SUB POWER TRANSFORMER
RL800
L871 AC LINE FILTER
SO801 AC INPUT SOCKET AC 230 V, 50 Hz
AC POWER SUPPLY CORD
RELAY DRIVER
When Servicing, pay attention as the area enclosed by this line (▬ ▪ ▬) is directly connected with AC main voltage.

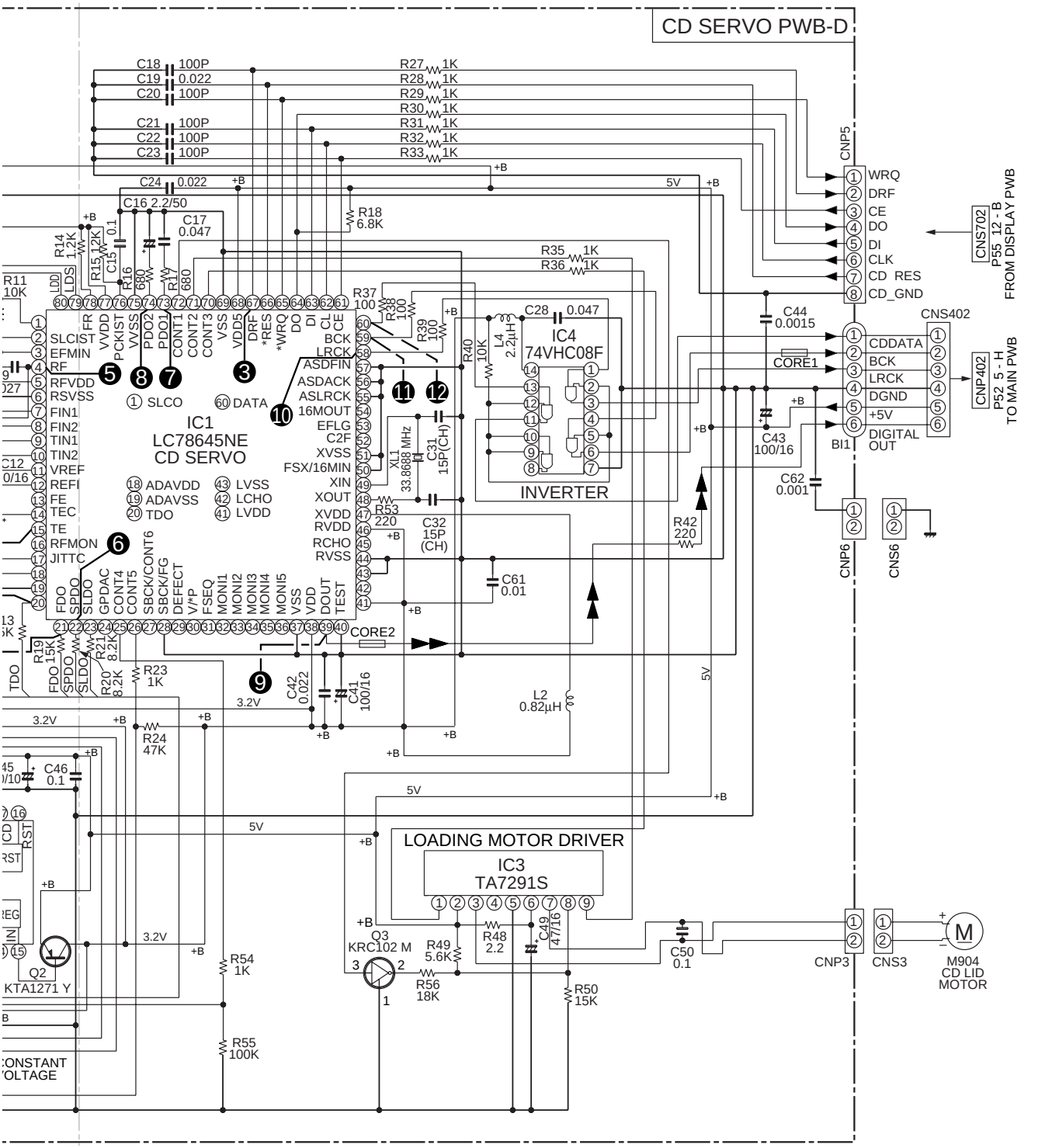
7	8	9	10	11	12

Figure 59 SCHEMATIC DIAGRAM (8/12)



• NOTES ON SCHEMATIC DIAGRAM can be found on page 37.

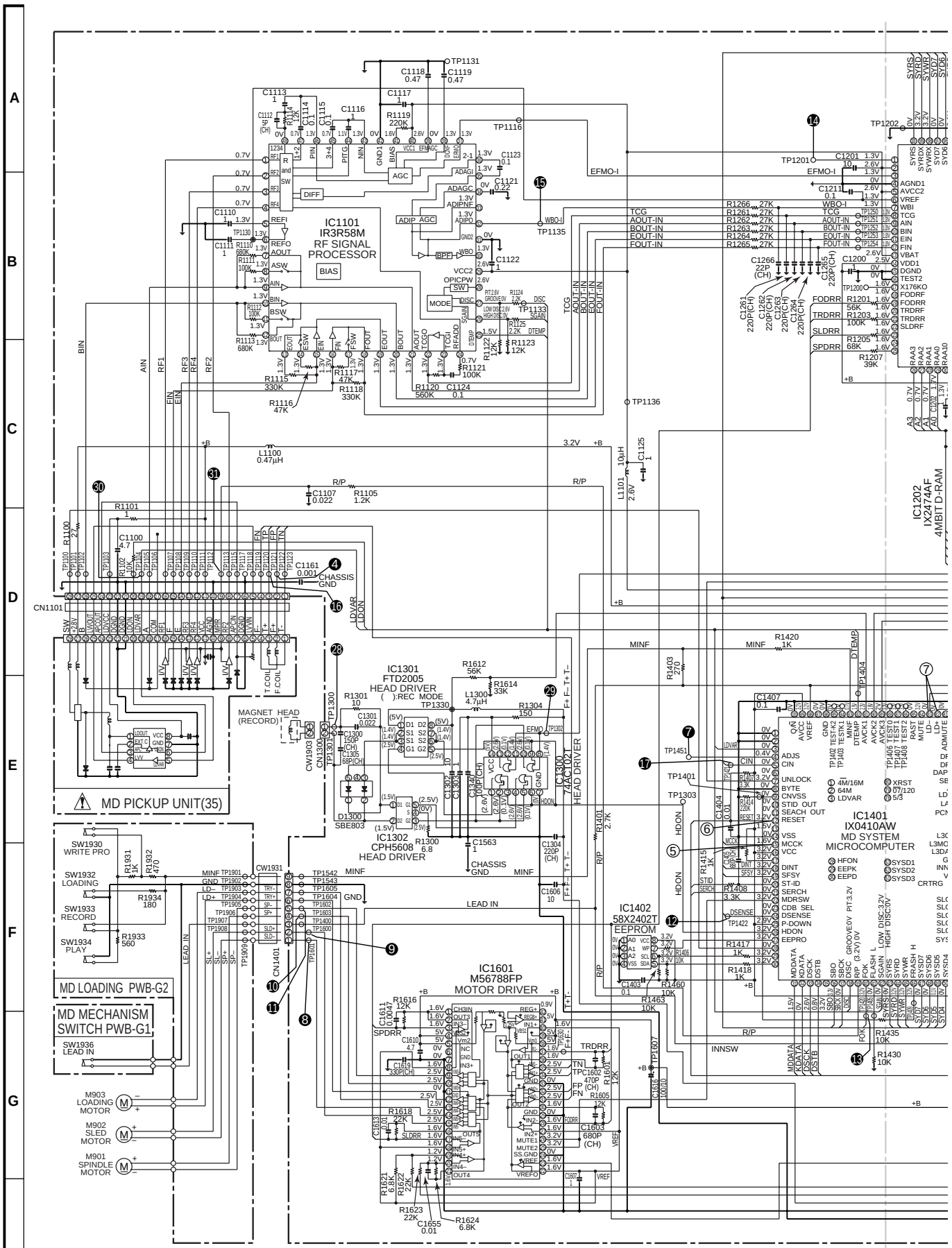
Figure 60 SCHEMATIC DIAGRAM (9/12)



• The numbers ❶ to ⓬ are waveform numbers shown in page 65.

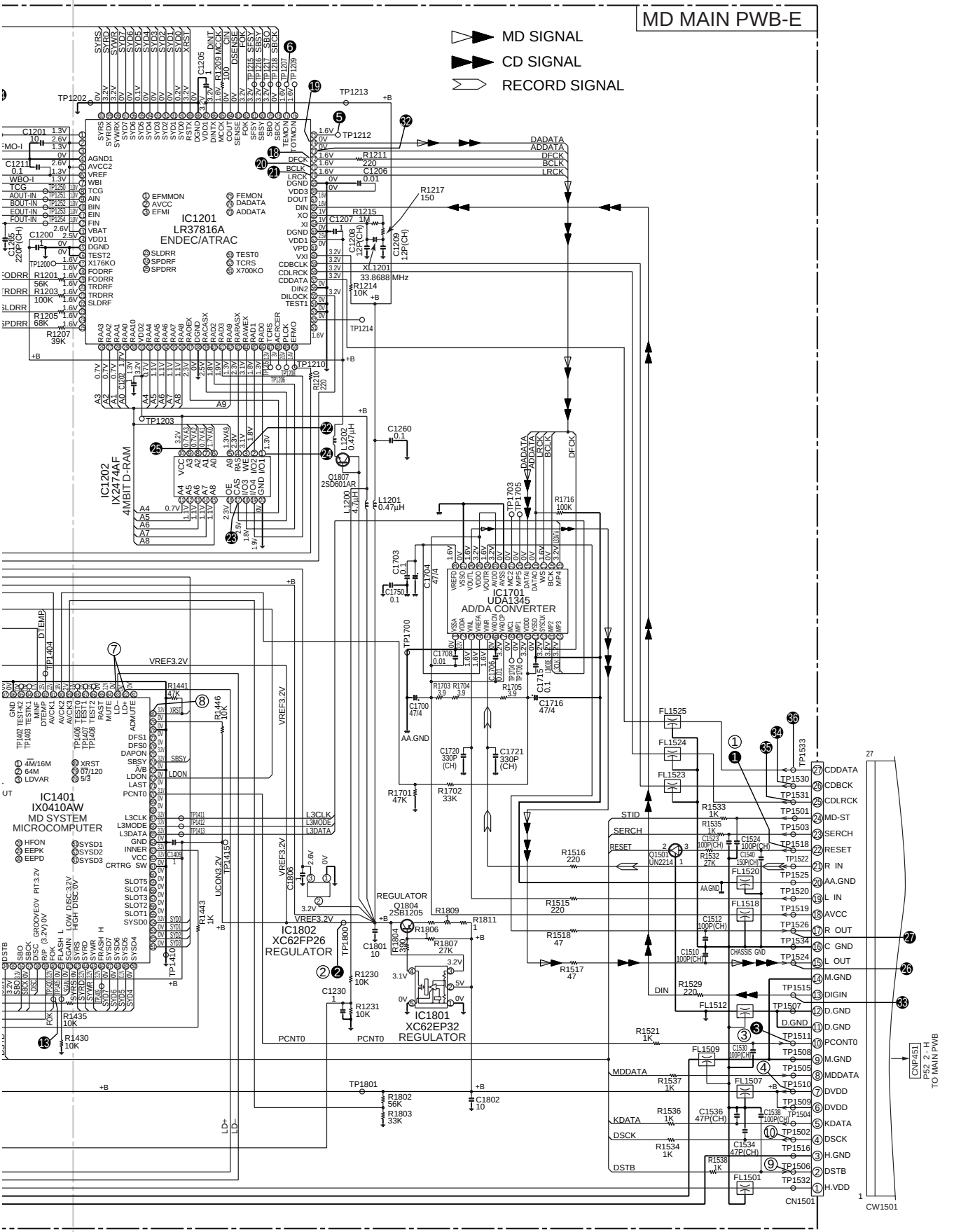
7	8	9	10	11	12

Figure 61 SCHEMATIC DIAGRAM (10/12)



• NOTES ON SCHEMATIC DIAGRAM can be found on page 37.

Figure 62 SCHEMATIC DIAGRAM (11/12)



• The numbers ① to ⑩ are chart numbers shown in page 35, 36.

• The numbers ❶ to ❸❻ are waveform numbers shown in page 66, 67.

7	8	9	10	11	12

Figure 63 SCHEMATIC DIAGRAM (12/12)

VOLTAGE

IC1

PIN NO.	VOLTAGE	PIN NO.	VOLTAGE
1	1.574 V	41	3.255 V
2	1.012 V	42	0 V
3	1.578 V	43	0 V
4	1.604 V	44	0 V
5	3.251 V	45	0 V
6	0 V	46	3.255 V
7	1.641 V	47	3.255 V
8	1.637 V	48	3.255 V
9	1.636 V	49	0 V
10	1.636 V	50	0 V
11	1.64 V	51	0 V
12	1.62 V	52	3.255 V
13	0 V	53	0 V
14	1.639 V	54	0 V
15	1.646 V	55	0 V
16	0 V	56	0 V
17	0 V	57	0 V
18	3.252 V	58	3.255 V
19	0 V	59	3.255 V
20	1.62 V	60	0 V
21	1.622 V	61	0 V
22	1.624 V	62	0 V
23	1.622 V	63	0 V
24	1.622 V	64	4.74 V
25	0.56 V	65	4.99 V
26	3.242 V	66	4.09 V
27	0 V	67	0 V
28	0 V	68	5 V
29	1.074 V	69	0 V
30	3.255 V	70	0 V
31	0 V	71	0 V
32	3.25 V	72	0 V
33	3.255 V	73	0 V
34	0 V	74	0.562 V
35	1.613 V	75	0 V
36	0 V	76	3.252 V
37	0 V	77	3.255 V
38	3.255 V	78	3.255 V
39	3.255 V	79	0 V
40	0 V	80	3.239 V

IC2

PIN NO.	VOLTAGE
1	5.01 V
2	0 V
3	1.635 V
4	1.637 V
5	2.137 V
6	0 V
7	0 V
8	0 V
9	0 V
10	2.192 V
11	2.192 V
12	1.637 V
13	1.636 V
14	3.258 V
15	4.35 V
16	3.242 V
17	3.87 V
18	1.635 V
19	1.637 V
20	2.18 V
21	2.181 V
22	0 V
23	0 V
24	0 V
25	2.162 V
26	2.162 V
27	1.637 V
28	1.635 V
29	1.64 V
30	5.01 V

IC3

PIN NO.	VOLTAGE
1	0 V
2	5.02 V
3	0.369 V
4	0 V
5	0 V
6	5.02 V
7	0.436 V
8	3.32 V
9	0 V

Q1

PIN NO.	VOLTAGE
E	3.252 V
B	0 V
C	3.239 V

IC4

PIN NO.	VOLTAGE
1	0 V
2	3.246 V
3	0 V
4	3.256 V
5	3.251 V
6	3.256 V
7	0 V
8	3.256 V
9	3.253 V
10	3.252 V
11	3.256 V
12	3.253 V
13	3.257 V
14	3.257 V

Q2

PIN NO.	VOLTAGE
E	5.011 V
B	4.34 V
C	3.255 V

Q3

PIN NO.	VOLTAGE
E	0 V
B	0 V
C	1.988 V

Q301

PIN NO.	VOLTAGE
E	0 V
B	0 V
C	0 V

Q360

PIN NO.	VOLTAGE
E	9.91 V
B	9.91 V
C	0 V

QT21

PIN NO.	VOLTAGE
E	0 V
B	0 V
C	0 V

IC302

PIN NO.	VOLTAGE
1	2.51 V
2	0 V
3	0 V
4	0 V
5	0 V
6	4.62 V
7	9.89 V
8	4.69 V
9	0 V
10	0 V
11	5.14 V
12	0 V
13	5.11 V
14	0 V
15	2.481 V
16	0 V
17	5.16 V
18	0 V
19	0 V
20	9.9 V
21	0 V
22	2.509 V

IC303

PIN NO.	VOLTAGE
1	2.147 V
2	5.07 V
3	2.148 V
4	2.139 V
5	0 V
6	5.14 V
7	5.14 V
8	3.47 V
9	5.06 V
10	4.37 V
11	1.816 V
12	1.239 V
13	2.265 V
14	1.333 V
15	1.323 V
16	2.137 V
17	0 V
18	1.517 V
19	2.217 V
20	1.506 V
21	2.12 V
22	2.12 V
23	5.06 V
24	3.54 V

ICT21

PIN NO.	VOLTAGE
1	0 V
2	0 V
3	0 V
4	0 V
5	0 V
6	0 V
7	0 V
8	0 V
9	0 V
10	0 V
11	0 V
12	0 V
13	0 V
14	0 V
15	0 V
16	0 V

IC401

PIN NO.	VOLTAGE
1	0 V
2	0 V
3	0 V
4	4.94 V
5	4.78 V
6	4.78 V
7	4.8 V
8	4.94 V
9	4.86 V
10	4.86 V
11	4.86 V
12	4.86 V
13	4.91 V
14	4.92 V
15	4.92 V
16	4.92 V
17	4.94 V
18	4.92 V
19	4.91 V
20	4.91 V
21	4.94 V
22	4.94 V
23	9.89 V
24	0 V

IC701

PIN NO.	VOLTAGE	PIN NO.	VOLTAGE
1	4.13 V	51	–28.07 V
2	4.4 V	52	–28.05 V
3	4.39 V	53	–28.06 V
4	4.39 V	54	–28.05 V
5	0 V	55	–28.05 V
6	1.215 V	56	–28.04 V
7	0 V	57	–27.96 V
8	4.11 V	58	–27.56 V
9	0 V	59	–27.52 V
10	0 V	60	–27.56 V
11	0 V	61	–17.36 V
12	0 V	62	–24.98 V
13	0 V	63	–22.41 V
14	4.66 V	64	–22.37 V
15	0 V	65	–12.34 V
16	0 V	66	–14.83 V
17	3.201 V	67	–24.98 V
18	0 V	68	–30.16 V
19	2.46 V	69	–30.17 V
20	3.4 V	70	–12.27 V
21	0 V	71	–17.37 V
22	3.67 V	72	–24.99 V
23	3.98 V	73	–24.99 V
24	4.07 V	74	–27.56 V
25	0 V	75	–12.27 V
26	0 V	76	–19.87 V
27	0 V	77	–27.68 V
28	0 V	78	–22.63 V
29	3.135 V	79	–25.19 V
30	0 V	80	–12.75 V
31	3.98 V	81	–17.97 V
32	4.31 V	82	0 V
33	0 V	83	–25.51 V
34	0 V	84	–27.97 V
35	4.21 V	85	0 V
36	4.61 V	86	–20.45 V
37	0 V	87	–22.94 V
38	1.702 V	88	–30.53 V
39	1.958 V	89	–30.52 V
40	0 V	90	–12.85 V
41	0 V	91	4.12 V
42	0 V	92	–23 V
43	0 V	93	–25.52 V
44	0 V	94	–25.92 V
45	4.07 V	95	–32.99 V
46	–30.52 V	96	–19.48 V
47	–30.52 V	97	–30.96 V
48	–28.08 V	98	–30.74 V
49	–28.06 V	99	0 V
50	–28.06 V	100	0 V

Q701

PIN NO.	VOLTAGE
E	0 V
B	0 V
C	3.17 V

Q738

PIN NO.	VOLTAGE
E	0 V
B	1.302 V
C	2.435 V

Q782

PIN NO.	VOLTAGE
E	0 V
B	0.4 V
C	3.68 V

Q781

PIN NO.	VOLTAGE
E	0 V
C	0 V
B	3.99 V

Q801

PIN NO.	VOLTAGE
E	–30.68 V
B	–31.31 V
C	–41.8 V

Q871

PIN NO.	VOLTAGE
E	0 V
B	0.792 V
C	0 V

IC901

PIN NO.	VOLTAGE
1	9.14 V
2	0 V
3	2.539 V
4	2.248 V
5	0 V
6	0 V
7	8.96 V
8	8.94 V
9	0 V
10	8.98 V
11	0 V
12	8.95 V
13	18.64 V

Q941

PIN NO.	VOLTAGE
E	6.55 V
B	5.94 V
C	23.49 V

Q951

PIN NO.	VOLTAGE
1	23.36 V
2	0 V
3	9.91 V

Q961

PIN NO.	VOLTAGE
1	11.57 V
2	0 V
3	5.04 V

Q952

PIN NO.	VOLTAGE
E	3.145 V
B	8.81 V
C	3.72 V

IC1101

PIN NO.	VOLTAGE
1	0.7 V
2	0.7 V
3	0.7 V
4	0.7 V
5	1.3 V
6	1.3 V
7	1.3 V
8	1.3 V
9	1.3 V
10	1.3 V
11	1.3 V
12	1.3 V
13	1.3 V
14	1.3 V
15	1.3 V
16	1.3 V
17	1.3 V
18	1.3 V
19	1.3 V
20	1.3 V
21	1.3 V
22	1.3 V
23	1.3 V
24	0.7 V
25	1.5 V
26	LOW DISC:2.6 V HIGH DISC:0 V
27	PIT:2.6 V GROO VE:0 V
28	2.6 V
29	2.6 V
30	1.3 V
31	0 V
32	1.3 V
33	1.3 V
34	0 V
35	1.3 V
36	1.3 V
37	1.3 V
38	1.3 V
39	0 V
40	2.6 V
41	1.6 V
42	0 V
43	1.3 V
44	1.1 V
45	0.7 V
46	1.3 V
47	0.7 V
48	0 V

IC1202

PIN NO.	VOLTAGE
1	1.3 V
2	1.8 V
3	3.1 V
4	2.3 V
5	1.3 V
6	1.7 V
7	0.7 V
8	0.7 V
9	0.7 V
10	3.2 V
11	0.7 V
12	1.1 V
13	1.1 V
14	1.1 V
15	1.1 V
16	2.3 V
17	2.5 V
18	1.8 V
19	1.9 V
20	0 V

IC1402

PIN NO.	VOLTAGE
1	0 V
2	0 V
3	0 V
4	0 V
5	3.2 V
6	3.2 V
7	3.2 V
8	3.2 V

IC1201

PIN NO.	VOLTAGE	PIN NO.	VOLTAGE
1	1.3 V	51	1.6 V
2	2.6 V	52	0 V
3	1.3 V	53	0 V
4	0 V	54	0 V
5	2.6 V	55	3.2 V
6	1.3 V	56	0 V
7	1.3 V	57	0 V
8	1.3 V	58	0 V
9	1.3 V	59	0 V
10	1.3 V	60	3.2 V
11	1.3 V	61	0 V
12	1.3 V	62	2.5 V
13	2.6 V	63	0 V
14	2.6 V	64	1 V
15	0 V	65	1 V
16	0 V	66	1.6 V
17	1.6 V	67	1.6 V
18	1.6 V	68	0 V
19	1.6 V	69	0 V
20	1.6 V	70	1.6 V
21	1.6 V	71	1.6 V
22	1.6 V	72	1.6 V
23	1.6 V	73	0 V
24	1.6 V	74	0 V
25	1.6 V	75	1.6 V
26	0.7 V	76	1.6 V
27	0.7 V	77	1.6 V
28	0.7 V	78	0 V
29	1.7 V	79	3.2 V
30	1.3 V	80	3.2 V
31	3.2 V	81	3.2 V
32	0.7 V	82	3.2 V
33	1.1 V	83	0 V
34	1.1 V	84	0 V
35	1.1 V	85	1.6 V
36	1.1 V	86	3.2 V
37	2.3 V	87	3.2 V
38	0 V	88	0 V
39	2.5 V	89	3.2 V
40	1.8 V	90	0.2 V
41	1.9 V	91	0 V
42	1.3 V	92	0 V
43	2.3 V	93	0 V
44	3.1 V	94	0 V
45	1.8 V	95	0.1 V
46	1.3 V	96	0 V
47	1.3 V	97	0 V
48	3 V	98	3.2 V
49	2.6 V	99	3.2 V
50	1.4 V	100	0 V

IC1300

PIN NO.	VOLTAGE
1	(2.6 V)
2	(2.6 V)
3	(0.1 V)
4	(2.6 V)
5	(2.6 V)
6	(0.1 V)
7	(0 V)
8	(1.4 V)
9	(0.1 V)
10	(2.6 V)
11	(1.4 V)
12	(0.1 V)
13	(2.6 V)
14	(5 V)

IC1301

PIN NO.	VOLTAGE
1	(5 V)
2	(1.4 V)
3	(1.4 V)
4	(2.5 V)
5	(2.5 V)
6	(1.4 V)
7	(1.4 V)
8	(5 V)

IC1302

PIN NO.	VOLTAGE
1	(1.5 V)
2	(1.5 V)
3	(2.5 V)
4	(0 V)
5	(2.5 V)

( ): REC MODE

IC1701

PIN NO.	VOLTAGE
1	0 V
2	3.2 V
3	1.6 V
4	1.6 V
5	1.6 V
6	0 V
7	3.2 V
8	0 V
9	0 V
10	3.2 V
11	0 V
12	3.2 V
13	3.2 V
14	3.2 V
15	3.2 V
16	0 V
17	1.7 V
18	0 V
19	0 V
20	0 V
21	0 V
22	0 V
23	3.2 V
24	—
25	3.2 V
26	—
27	0 V
28	1.6 V

IC1401

PIN NO.	VOLTAGE	PIN NO.	VOLTAGE
1	0 V	51	0 V
2	0 V	52	0 V
3	0 V	53	0 V
4	0.4 V	54	0.2 V
5	0 V	55	0 V
6	0 V	56	0 V
7	3.2 V	57	0 V
8	0 V	58	0 V
9	0 V	59	0 V
10	0 V	60	0 V
11	0 V	61	0 V
12	3.2 V	62	3.2 V
13	1.5 V	63	3.2 V
14	0 V	64	0 V
15	1.6 V	65	3.2 V
16	3.2 V	66	3.2 V
17	3.2 V	67	3.2 V
18	3.2 V	68	0 V
19	3.2 V	69	0 V
20	0 V	70	3.1 V
21	0 V	71	0 V
22	3.2 V	72	0 V
23	0 V	73	0 V
24	0 V	74	3.2 V
25	2.9 V	75	3.2 V
26	3.2 V	76	0 V
27	3.2 V	77	0 V
28	0 V	78	0 V
29	3.2 V	79	0 V
30	3.2 V	80	3.2 V
31	1.5 V	81	0 V
32	0 V	82	0 V
33	2.6 V	83	0 V
34	0.8 V	84	3.2 V
35	3.2 V	85	0 V
36	3.2 V	86	3.2 V
37	0 V	87	3.2 V
38	PIT:3.2 V GROO VE:0 V	88	3.2 V
		89	2 V
39	0 V	90	1.8 V
40	3.2 V	91	2.2 V
41	0 V	92	1.5 V
42	LOW DISC:3.2 V HIGH DISC:0 V	93	0.7 V
		94	0 V
43	0 V	95	0 V
44	3.2 V	96	0 V
45	3.2 V	97	0 V
46	3.2 V	98	3.2 V
47	0 V	99	3.2 V
48	0 V	100	0 V
49	0.1 V		
50	0 V		

IC1601

PIN NO.	VOLTAGE	PIN NO.	VOLTAGE
1	1.6 V	22	1.6 V
2	1.6 V	23	1.6 V
3	1.6 V	24	0 V
4	5 V	25	3.2 V
5	5 V	26	3.2 V
6	0 V	27	1.6 V
7	0 V	28	1.6 V
8	1.6 V	29	0 V
9	2.5 V	30	1.6 V
10	2.5 V	31	2.5 V
11	0 V	32	2.5 V
12	2.5 V	33	0 V
13	2.5 V	34	2.5 V
14	2.4 V	35	2.5 V
15	2.5 V	36	1.6 V
16	1.6 V	37	1.6 V
17	1.6 V	38	5 V
18	1.6 V	39	5 V
19	1.2 V	40	1.6 V
20	1.2 V	41	5 V
21	1.6 V	42	0.9 V

IC1801

PIN NO.	VOLTAGE
1	0 V
2	5 V
3	3.2 V
4	3.1 V
5	0 V

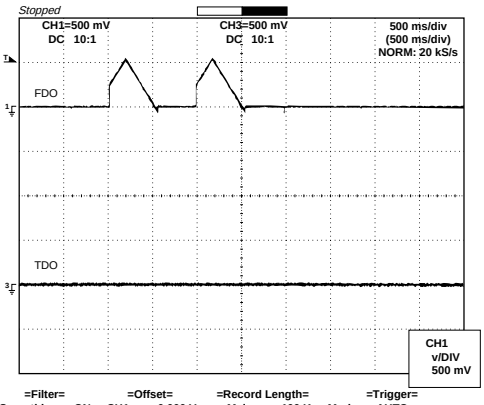
IC1802

PIN NO.	VOLTAGE
1	0 V
2	2.6 V
3	3.2 V

WAVEFORMS OF CD CIRCUIT

1 IC1 (21)

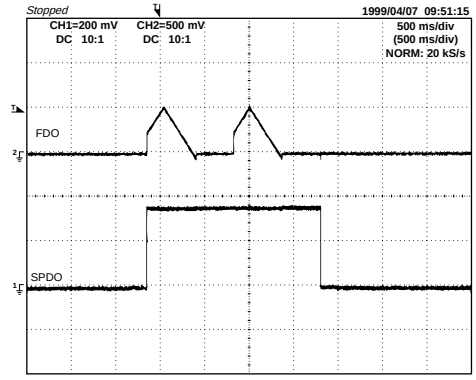
2 IC1 (20)



=Filter=	=Offset=	=Record Length=	=Trigger=
Smoothing : ON	CH1 : 0.000 V	Main : 100 K	Mode : AUTO
BW : FULL	CH2 : 0.0 V	Zoom : 2 K	Type : EDGE CH1
	CH3 : 0.000 V		Delay : 0.0 ns
	CH4 : 0.00 V		Hold off : 0.2 µs

1 IC1 (21)

6 IC1 (22)

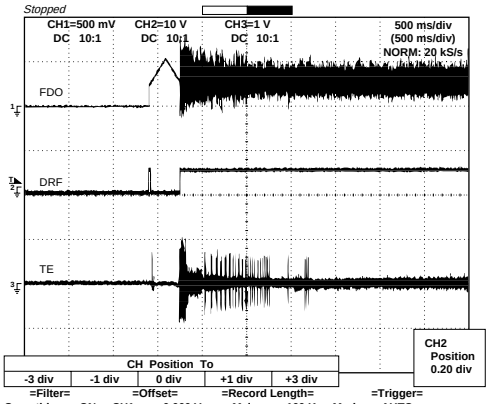


=Filter=	=Offset=	=Record Length=	=Trigger=
Smoothing : ON	CH1 : 0.000 V	Main : 100 K	Mode : NORMAL
BW : FULL	CH2 : 0.000 V	Zoom : 2 K	Type : EDGE CH2
	CH3 : 0.00 V		Delay : 2.924 ms
	CH4 : 0.00 V		Hold off : 0.2 µs

1 IC1 (21)

3 IC1 (67)

4 IC1 (15)

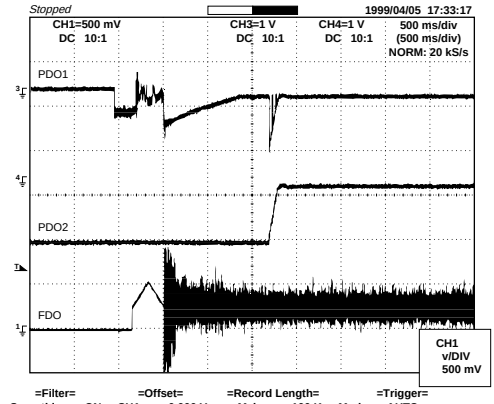


=Filter=	=Offset=	=Record Length=	=Trigger=
Smoothing : ON	CH1 : 0.000 V	Main : 100 K	Mode : AUTO
BW : FULL	CH2 : 0.0 V	Zoom : 2 K	Type : EDGE CH1
	CH3 : 0.00 V		Delay : 0.0 ns
	CH4 : 0.00 V		Hold off : 0.2 µs

7 IC1 (73)

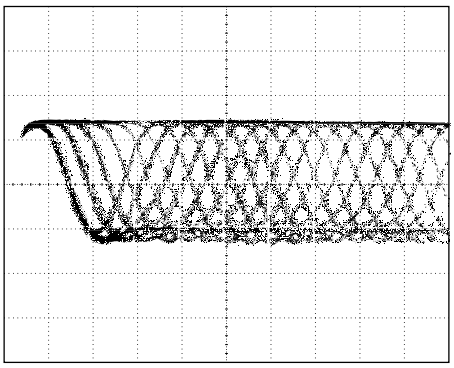
8 IC1 (74)

1 IC1 (21)



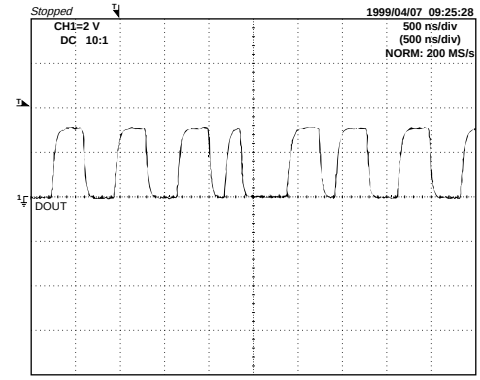
=Filter=	=Offset=	=Record Length=	=Trigger=
Smoothing : ON	CH1 : 0.000 V	Main : 100 K	Mode : AUTO
BW : FULL	CH2 : 0.0 V	Zoom : 2 K	Type : EDGE CH2
	CH3 : 0.00 V		Delay : 0.0 ns
	CH4 : 0.00 V		Hold off : 0.2 µs

5 IC1 (4)



Vp-p=1.0 V~1.3 V
0.5 mV/div,0.5 µsec/div

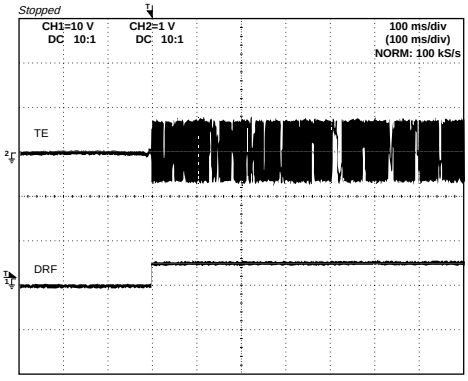
9 IC1 (39)



=Filter=	=Offset=	=Record Length=	=Trigger=
Smoothing : ON	CH1 : 0.00 V	Main : 1 K	Mode : NORMAL
BW : FULL	CH2 : 0.00 V	Zoom : 100	Type : EDGE CH1
	CH3 : 0.00 V		Delay : 2.887 ms
	CH4 : 0.00V		Hold off : 0.2 µs

4 IC1 (15)

3 IC1 (67)

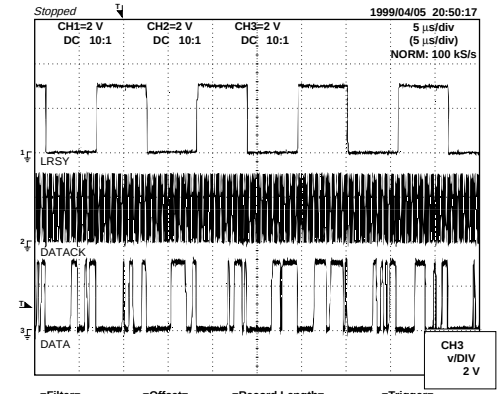


=Filter=	=Offset=	=Record Length=	=Trigger=
Smoothing : ON	CH1 : 0.0 V	Main : 100 K	Mode : NORMAL
BW : FULL	CH2 : 0.00 V	Zoom : 2 K	Type : EDGE CH1
	CH3 : 0.00 V		Delay : 2.924 ms
	CH4 : 0.00 V		Hold off : 0.2 µs

10 IC1 (58)

11 IC1 (59)

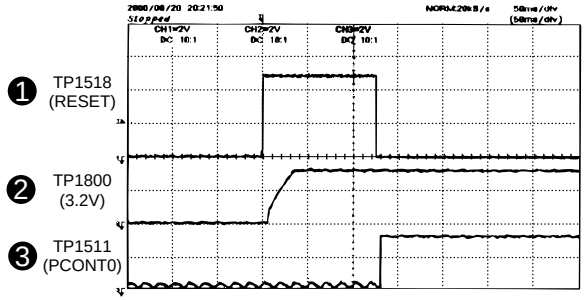
12 IC1 (60)



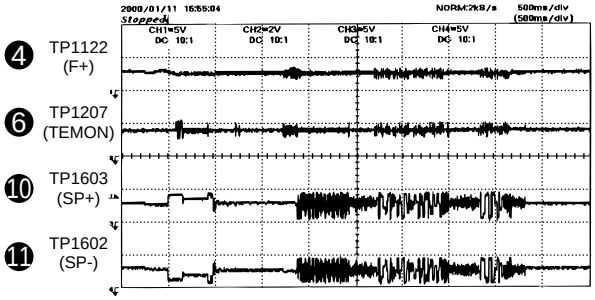
=Filter=	=Offset=	=Record Length=	=Trigger=
Smoothing : ON	CH1 : 0.00 V	Main : 5 K	Mode : AUTO
BW : FULL	CH2 : 0.00 V	Zoom : 100	Type : EDGE CH3
	CH3 : 0.00 V		Delay : 0.0 ns
	CH4 : 0.00 V		Hold off : 0.2 µs

WAVEFORMS OF MD CIRCUIT

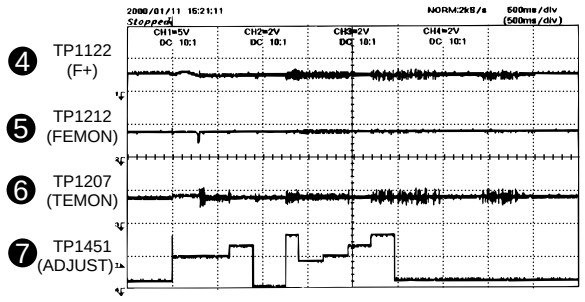
POWER ON



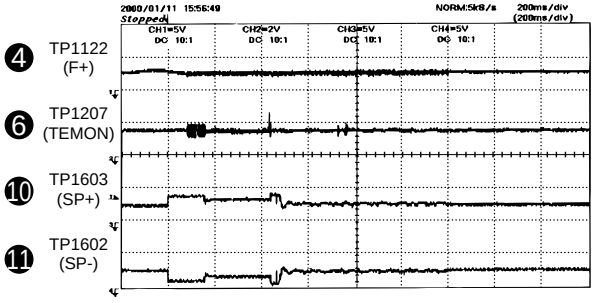
TOC READ (Low reflection disc)



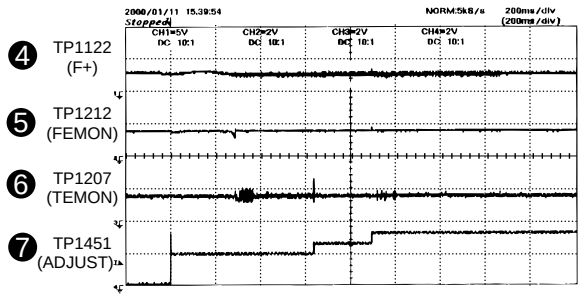
TOC READ (Low reflection disc)



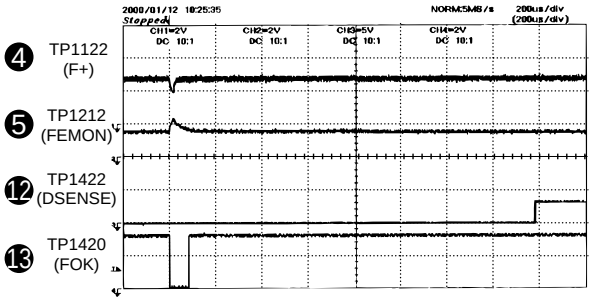
TOC READ (High reflection disc)



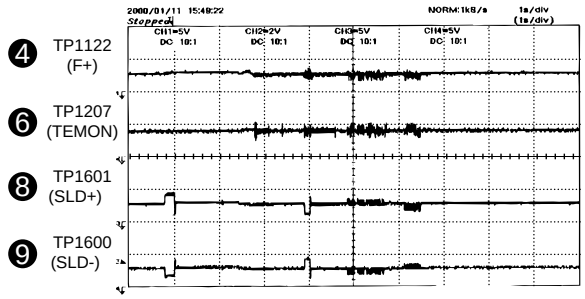
TOC READ (High reflection disc)



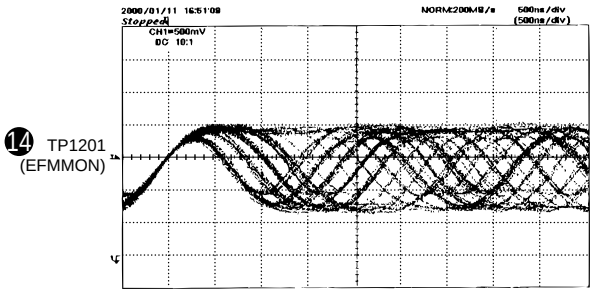
STOP → PLAY



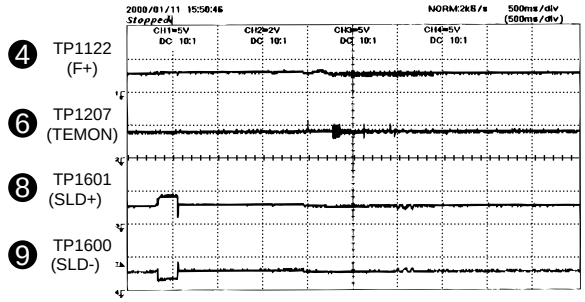
TOC READ (Low reflection disc)



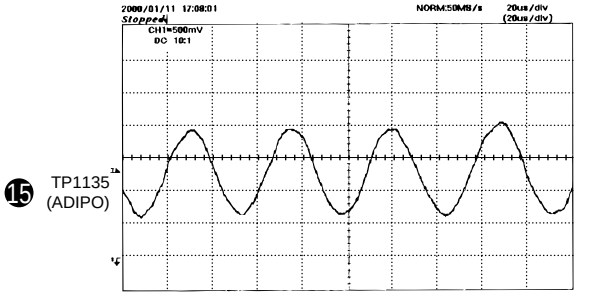
PLAY (Low reflection disc)



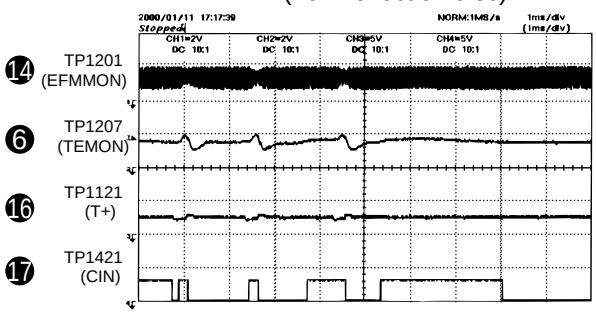
TOC READ (High reflection disc)



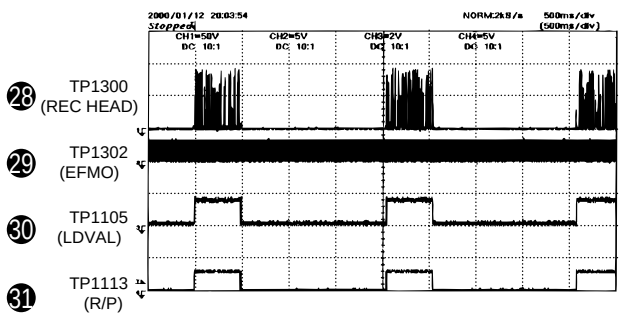
PLAY (Low reflection disc)



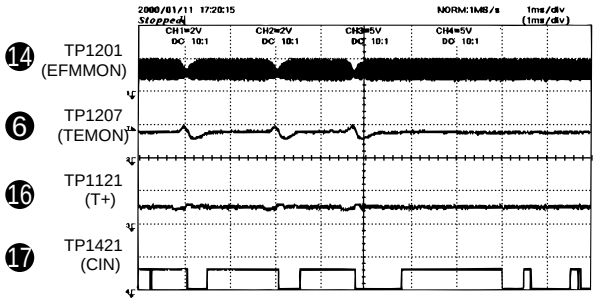
PLAY (Low reflection disc)



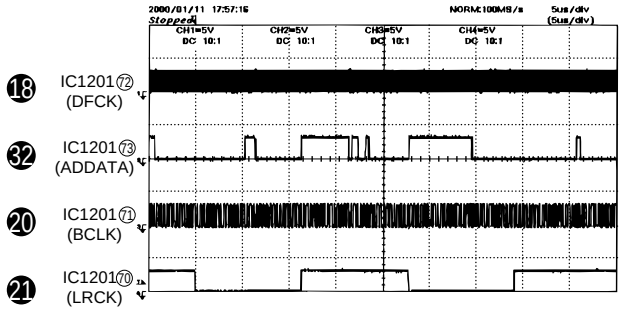
REC



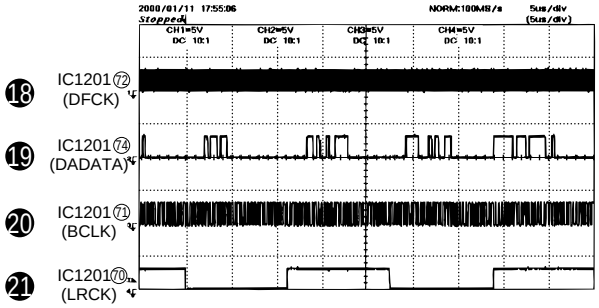
PLAY (High reflection disc)



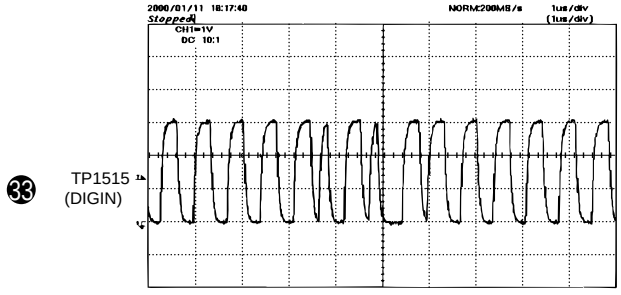
Analog REC



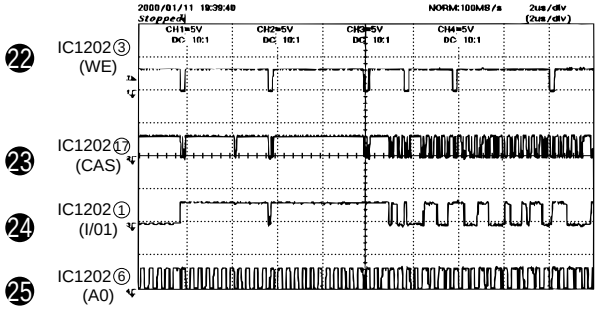
PLAY



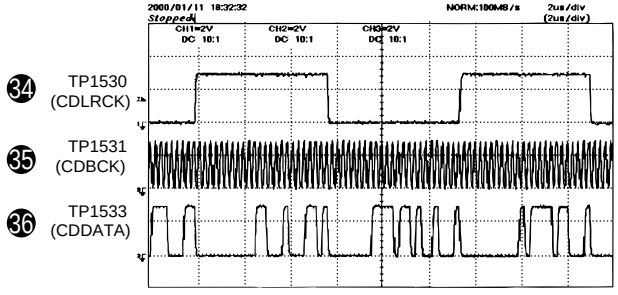
Digital REC



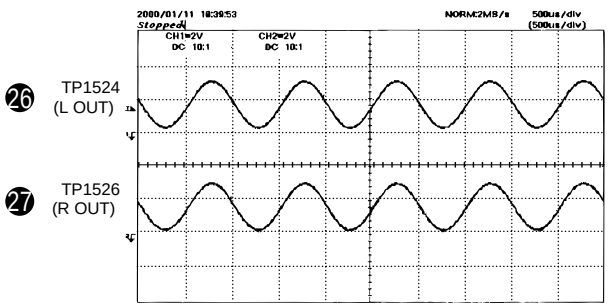
PLAY



Double speed REC



PLAY (1 kHz 0 dB)



TROUBLE SHOOTING

CD SECTION

When the CD does not function

When the CD section does not operate when the objective lens of the optical pickup is dirty, this section may not operate. Clean the objective lens, and check the playback operation. When this section does not operate even after the above step is taken, check the following items.
Remove the cabinet and follow the trouble shooting instructions.
"Track skipping and/or no TOC (Table Of Contents) may be caused by build up of dust other foreign matter on the laser pickup lens. Before attempting any adjustment make certain that the lens is clean. If not, clean it as mentioned below."

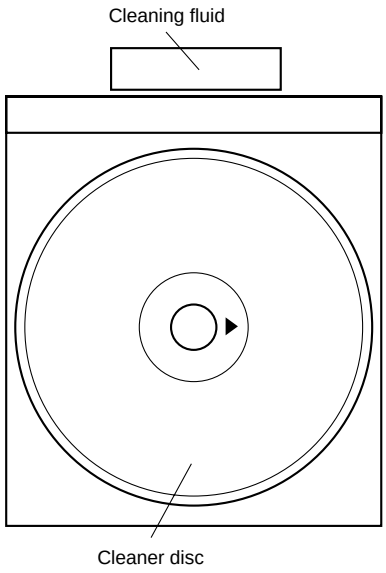
Turn off the power, and wipe the lens softly using a cleaning paper moistened with commercially available cleaning solution so as not to damage it. Be careful not to touch the lens with bare hands.

Dust gradually accumulates on the objective lens during use, and it may degrade performance. To avoid this problem, use a cleaning disc designed for CD optical pickup lenses.

		Parts code
1.	CD optical pickup Lens cleaner disc	UDSKA0004AFZZ

HOW TO USE

1. Using the brush in the cleaner cap, apply 1 or 2 drops of the cleaning fluid to the brush on the CD cleaner disc which has the mark next to it.
2. Place the CD cleaner disc onto the CD disc tray with the brush side down,then press the play button.
3. You will hear music for about 20 seconds and the CD player will automatically stop. If it continuous to turn, press the stop button.



CAUTION

- The CD lens cleaner should be effective for 30-50 operations, however if the brushes become worn out earlier then please the cleaner disc.
- If the CD cleaner brushes become very wet then wipe off any excess fluid with a soft cloth.
- Do not drink the cleaner fluid or allow it to come in contact with the eyes. In the event of this happening then drink and / or rinse with clean water and seek medical advice.
- The CD cleaner disc must not be used on car CD players or on computer CD-ROM drives.
- All rights reserved. Unauthorized duplicating, broadcasting and renting this product is prohibited by law.

When a CD cannot be played

1. "E-CD01" is displayed.

(1) Check the power to IC1 (LC78645NE), the presence of the clock signal (33.8688 MHz) and the status of the RESET terminal (pin 66 on IC1).
(2) Does the pickup move to the PICKUP-IN Switch (SW4) position?

If (1) and (2) are OK, check the system microcomputer (especially the communication line with the DSP).

2. Pressing the CD operation key is accepted, but playback does not occur.

(1) Focus-HF system check
(2) Tracking system check
(3) Spin system check
(4) PLL system check
(5) Others

(1) Focus-HF system check.

Although a CD is inserted and the cover is closed, "NO DISC" is displayed.

Press the OPEN/CLOSE switch (SW715) without inserting a disc, and try starting the playback operation.

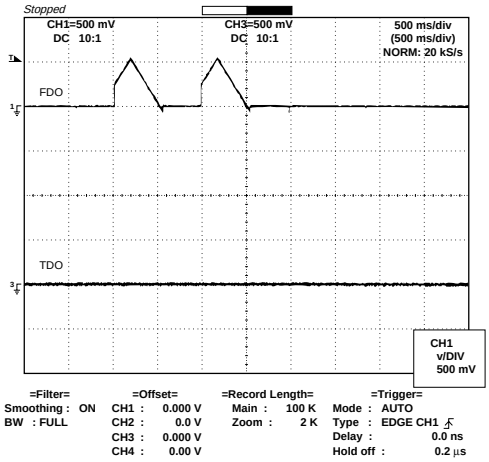


Figure 69-1

1. Does the pickup move to the PICKUP-IN Switch (SW4) position ?
   - No → Sled motor (M1).
   - Yes ↓
2. Does the focus (lens) move up and down ? (Waveform drawing Figure 69-1.)
   - No → Check the focus peripheral circuit.
   - Yes ↓
3. Is the laser lit ?
   - No → Check the laser diode driver Q1 peripheral circuit.
   - Yes ↓
4. Is the turntable rotating ?
   - No → Spindle motor (M2).

When a disc is loaded, start playback operation.

1. Is focus servo activated ? (Waveform drawing Figure 69-2.)
   - No → Pins 3~8 on IC1
     Check the laser diode driver Q1 peripheral circuit. (IC1 pin 80)
   - Yes ↓
2. Does DRF change from "L" to "H" ?
   - No → Is the disc rotating ?
     - No → Check the spin system.
       If the disc is spinning and a HF waveform is generated, DRF will go H.
     - Yes
   - Yes ↓
3. Is the HF waveform normal ? (Waveform drawing Figure 69-3.)
   - No → If the level is not normal, check around pins 1~4.
   - Yes

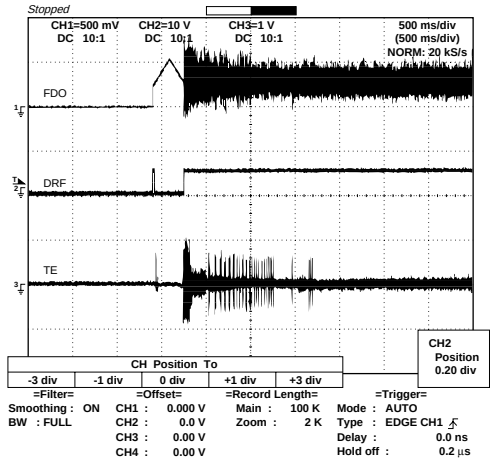


Figure 69-2

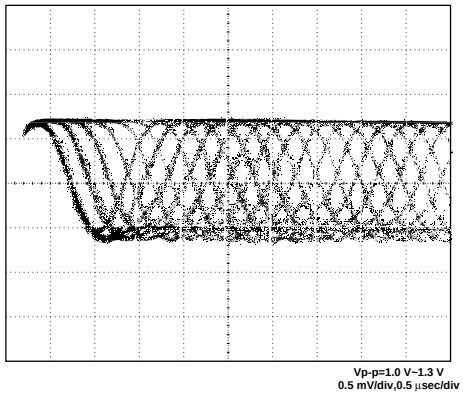


Figure 69-3

(2) Tracking system check.

Check the TE waveform at pin 15 on IC1.

If the waveform shown in Figure 70-1 appears and soon after NO DISC appears ?

Yes → The tracking servo is not activated.
Check the peripheral circuits at pins 9 and 10 on IC1, and circuit around CNP2.

No ↓

"Initialization" is possible, but play is not possible ?

Yes → A normal jump operation cannot be completed or the beginning of the track cannot be found.
Check the around pin 20 on IC1.

No ↓

"Initialization" is not possible. → Data cannot be read. Check the VCO-PLL system.

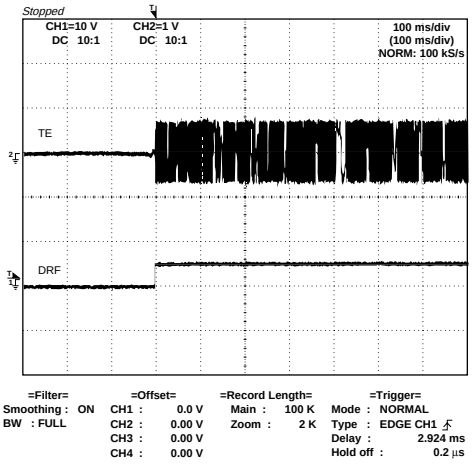

Stopped
CH1=10 V DC 10:1
CH2=1 V DC 10:1
100 ms/div
(100 ms/div)
NORM: 100 kS/s
TE
DRF
=Filter= Smoothing : ON BW : FULL
=Offset= CH1 : 0.0 V CH2 : 0.00 V CH3 : 0.00 V CH4 : 0.00 V
=Record Length= Main : 100 K Zoom : 2 K
=Trigger= Mode : NORMAL Type : EDGE CH1 Delay : 2.924 ms Hold off : 0.2 µs

Figure 70-1

(3) Spin system check.

Press the OPEN/CLOSE switch without inserting a disc, and then try starting the play operation.

1. The turntable rotates a little ?
(Waveform drawing Figure 70-2.)

Yes → The spin driver circuit is OK.

No ↓

2. The turntable doesn't rotate. → Check around pin 22 on IC1, pins 20 and 21 on IC2, and around CNP4.

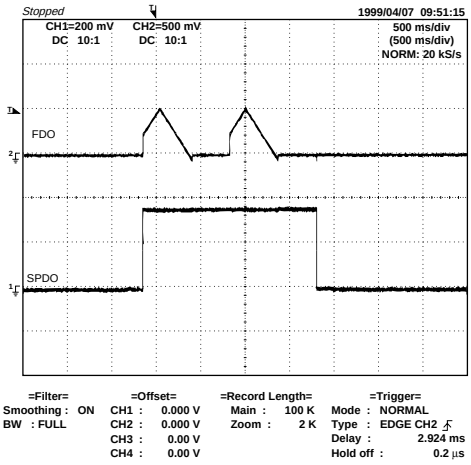

Stopped
1999/04/07 09:51:15
CH1=200 mV DC 10:1
CH2=500 mV DC 10:1
500 ms/div
(500 ms/div)
NORM: 20 kS/s
FDO
SPDO
=Filter= Smoothing : ON BW : FULL
=Offset= CH1 : 0.000 V CH2 : 0.000 V CH3 : 0.00 V CH4 : 0.00 V
=Record Length= Main : 100 K Zoom : 2 K
=Trigger= Mode : NORMAL Type : EDGE CH2 Delay : 2.924 ms Hold off : 0.2 µs

Figure 70-2

(4) PLL system check.

When a disc is loaded, start play operation.

↓

The HF waveform is normal, but the TOC data cannot be read.

↓

Check the PDO waveform (Figure 71-1).

↓

Check around pins 73~78 on IC1.

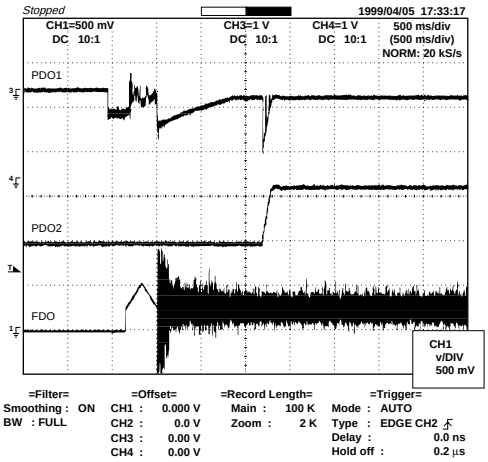


Figure 71-1

(5) Others.

The HF waveform is normal and the time is displayed normally, but no sound is produced. Or the sound has dropouts.

Is pin 52 (C2F) on IC1 "L" ?

No → There are too many error flags on a damaged disc which makes error correction impossible.

↓

Check again using a known good disc.

Yes

↓

1. When playing at normal speed
   Check the peripheral circuit at pin 39 (DOUT) on IC1 and the waveform (Figure 71-2).

↓

If OK, Check the MD unit.

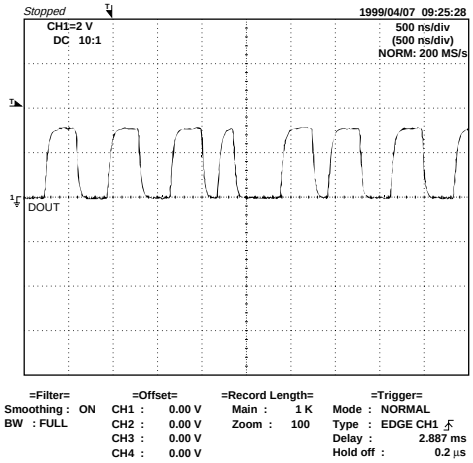


Figure 71-2

MD SECTION

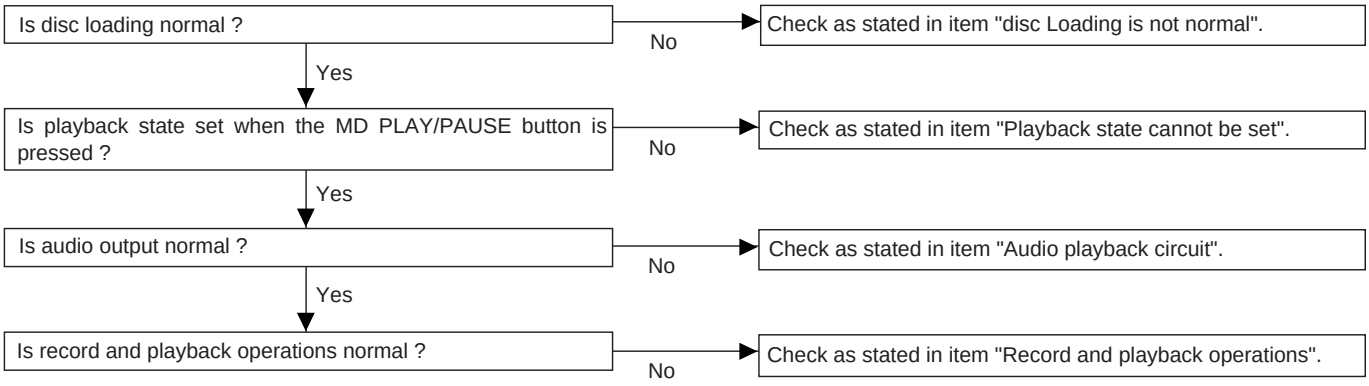
Preparations

If dusts and foreign materials are accumulated on the pickup lens, playback sounds can be skipped or the TOC (Table of Contents) can't be displayed. Clean the object lens and check the playback. When lens are dirty, do the following.

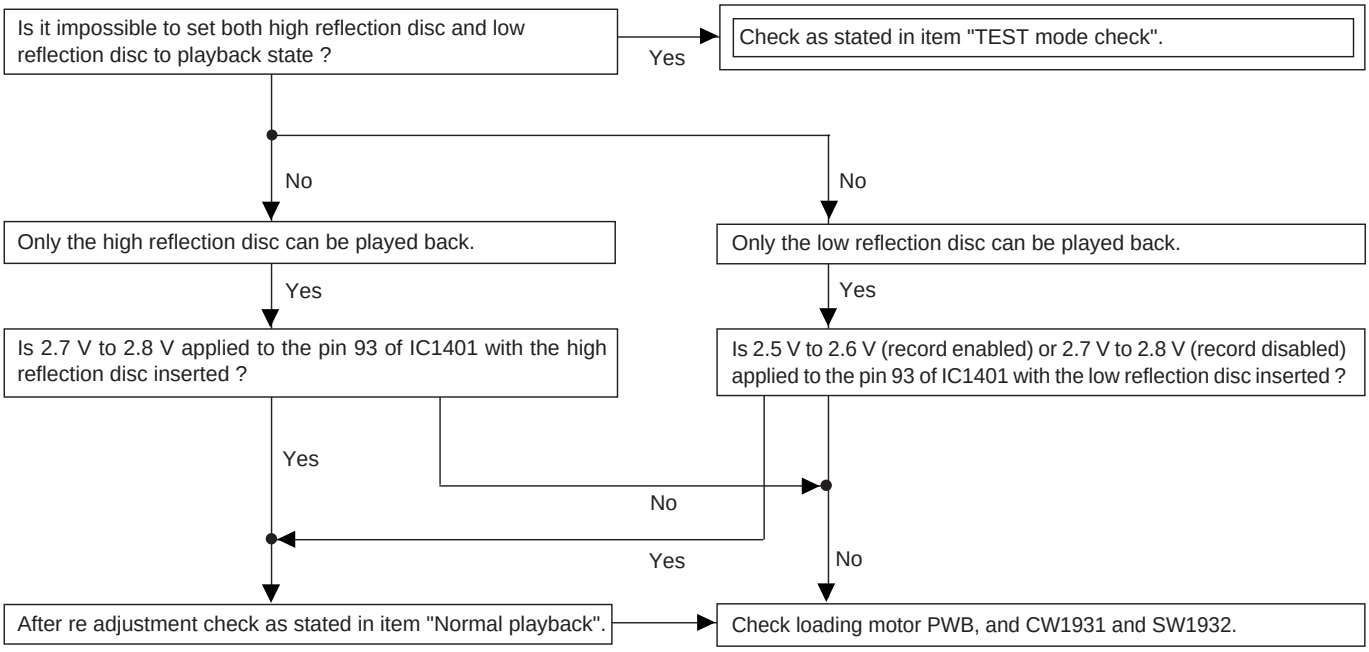
Turn off the power and wipe lens softly with a cleaning paper and a little cleaning solution so as not to damage it.
Do not touch lens with bare hands.

If the MD unit doesn't work

If the MD unit doesn't start after cleaning the pickup objects lens, check it as follows.

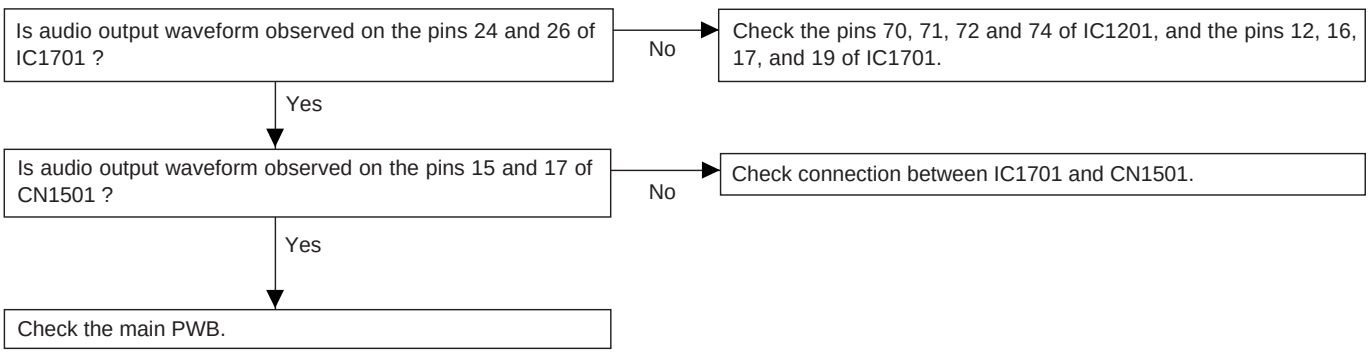

Is disc loading normal ?
No
Check as stated in item "disc Loading is not normal".
Yes
Is playback state set when the MD PLAY/PAUSE button is pressed ?
No
Check as stated in item "Playback state cannot be set".
Yes
Is audio output normal ?
No
Check as stated in item "Audio playback circuit".
Yes
Is record and playback operations normal ?
No
Check as stated in item "Record and playback operations".

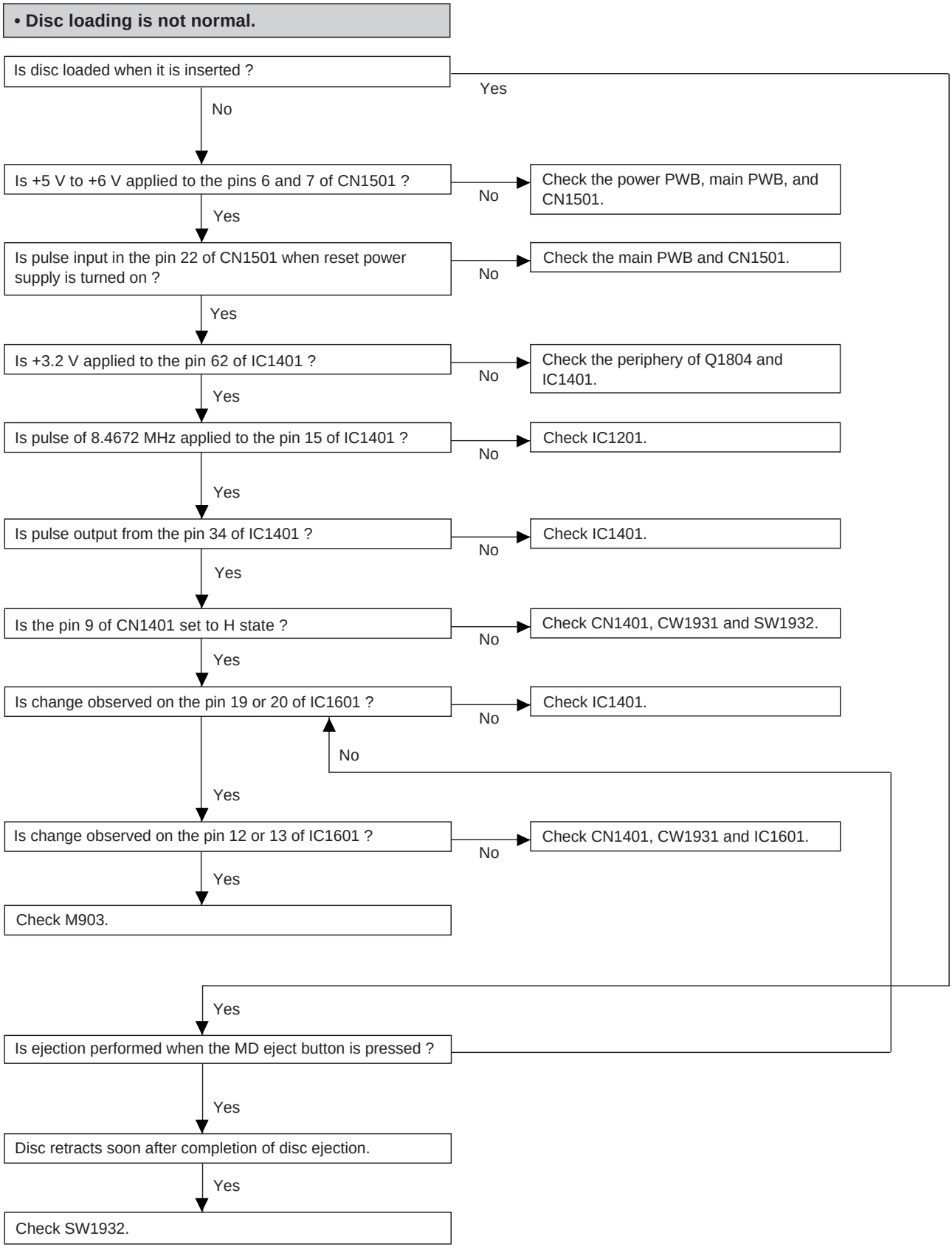
• Playback state cannot be set.


Is it impossible to set both high reflection disc and low reflection disc to playback state ?
Yes
Check as stated in item "TEST mode check".
No
No
Only the high reflection disc can be played back.
Only the low reflection disc can be played back.
Yes
Yes
Is 2.7 V to 2.8 V applied to the pin 93 of IC1401 with the high reflection disc inserted ?
Is 2.5 V to 2.6 V (record enabled) or 2.7 V to 2.8 V (record disabled) applied to the pin 93 of IC1401 with the low reflection disc inserted ?
Yes
No
Yes
No
After re adjustment check as stated in item "Normal playback".
Check loading motor PWB, and CW1931 and SW1932.

• Audio playback circuit

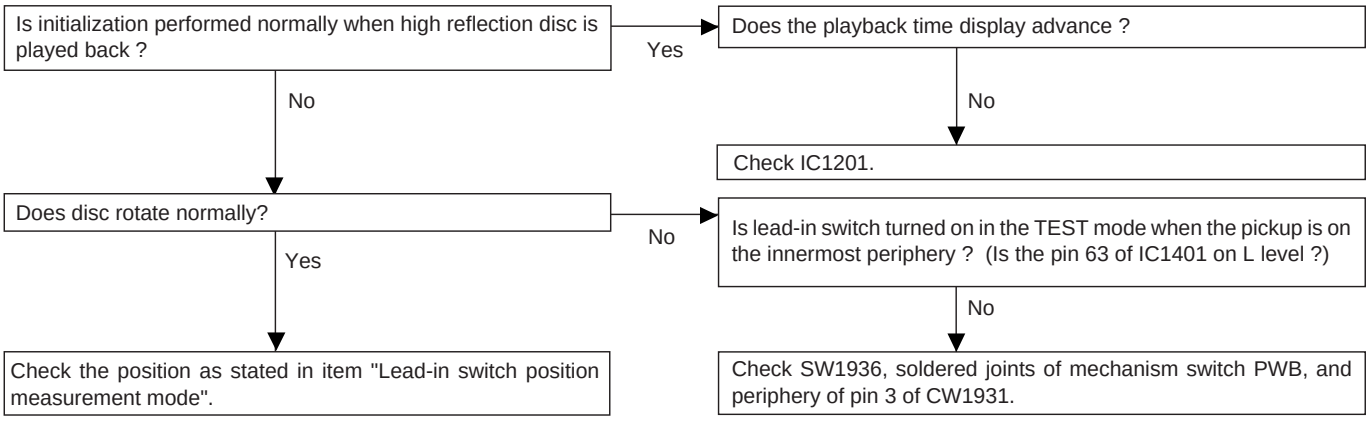
When sound is not output although the playback time display advances during playback in the normal mode.


Is audio output waveform observed on the pins 24 and 26 of IC1701 ?
No
Check the pins 70, 71, 72 and 74 of IC1201, and the pins 12, 16, 17, and 19 of IC1701.
Yes
Is audio output waveform observed on the pins 15 and 17 of CN1501 ?
No
Check connection between IC1701 and CN1501.
Yes
Check the main PWB.


• Disc loading is not normal.
Is disc loaded when it is inserted ?
Yes
No
Is +5 V to +6 V applied to the pins 6 and 7 of CN1501 ?
No
Check the power PWB, main PWB, and CN1501.
Yes
Is pulse input in the pin 22 of CN1501 when reset power supply is turned on ?
No
Check the main PWB and CN1501.
Yes
Is +3.2 V applied to the pin 62 of IC1401 ?
No
Check the periphery of Q1804 and IC1401.
Yes
Is pulse of 8.4672 MHz applied to the pin 15 of IC1401 ?
No
Check IC1201.
Yes
Is pulse output from the pin 34 of IC1401 ?
No
Check IC1401.
Yes
Is the pin 9 of CN1401 set to H state ?
No
Check CN1401, CW1931 and SW1932.
Yes
Is change observed on the pin 19 or 20 of IC1601 ?
No
Check IC1401.
No
Yes
Is change observed on the pin 12 or 13 of IC1601 ?
No
Check CN1401, CW1931 and IC1601.
Yes
Check M903.
Yes
Is ejection performed when the MD eject button is pressed ?
Yes
Disc retracts soon after completion of disc ejection.
Yes
Check SW1932.

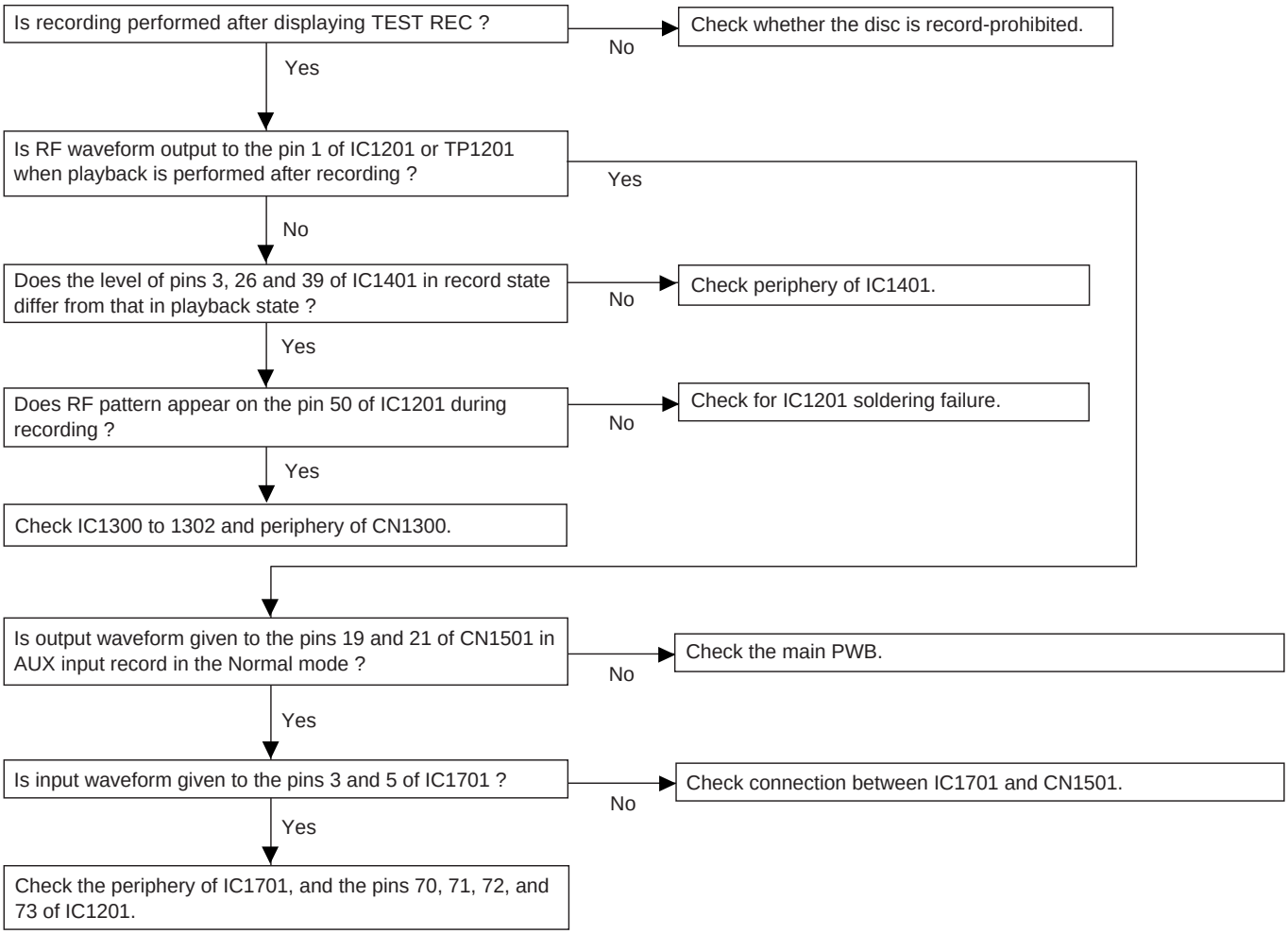
• Normal playback

When it has been confirmed that EEPROM value is normal in the TEST mode


Is initialization performed normally when high reflection disc is played back ?
Yes
Does the playback time display advance ?
No
No
Check IC1201.
Does disc rotate normally?
No
Is lead-in switch turned on in the TEST mode when the pickup is on the innermost periphery ? (Is the pin 63 of IC1401 on L level ?)
Yes
No
Check the position as stated in item "Lead-in switch position measurement mode".
Check SW1936, soldered joints of mechanism switch PWB, and periphery of pin 3 of CW1931.

• Record and playback operations

Insert the low reflection disc, and after verifying the audio output in the normal mode playback set the record/playback TEST mode.


Is recording performed after displaying TEST REC ?
No
Check whether the disc is record-prohibited.
Yes
Is RF waveform output to the pin 1 of IC1201 or TP1201 when playback is performed after recording ?
Yes
No
Does the level of pins 3, 26 and 39 of IC1401 in record state differ from that in playback state ?
No
Check periphery of IC1401.
Yes
Does RF pattern appear on the pin 50 of IC1201 during recording ?
No
Check for IC1201 soldering failure.
Yes
Check IC1300 to 1302 and periphery of CN1300.
Is output waveform given to the pins 19 and 21 of CN1501 in AUX input record in the Normal mode ?
No
Check the main PWB.
Yes
Is input waveform given to the pins 3 and 5 of IC1701 ?
No
Check connection between IC1701 and CN1501.
Yes
Check the periphery of IC1701, and the pins 70, 71, 72, and 73 of IC1201.

Check in the test mode

• The spindle motor does not rotate.

Is waveform output from the pin 25 of IC1201 in the step 4 of AUTO auxiliary adjustment mode of TEST mode ?

No → Check the pin 25 of IC1201, soldering of peripheral circuit, and parts.

Yes ↓

Is waveform output from the pins 9 and 10 of IC1601 and the pins 5 and 6 of CN1401 ?

No → Check IC1601, CN1401, and soldering of mechanism switch PWB.

Yes ↓

Replace with a spindle motor (complete).

• The sled motor does not rotate.

Do the pin 23 of IC1201 change with the ►► / ◄◄ button ?

No → Check the waveform of pin 23 of IC1201, peripheral parts, and soldering.

Yes ↓

Do the pins 14 and 15 of IC1601 and the pins 1 and 2 of CN1401 change with the ►► / ◄◄ button ?

No → Check IC1601 and soldering of CN1401.

Yes ↓

Does voltage of the + and - terminals on the sled motor change with the ►► / ◄◄ button ?

No → Check the soldering connected to the sled motor and for disconnection.

Yes ↓

Replace the sled motor.

FUNCTION TABLE OF IC

IC1 VHiLC78645NE1: CD Servo (LC78645NE) (1/2)

Pin No.	Terminal Name	Input/Output	Setting in Reset	Function	
1	SLCO	Output	—	For slice level control.	Control output.
2	SLCIST	Input	—		Resistor connection terminal for SLCO output current setting.
3	EFMIN	Input	—		RF signal input terminal.
4	RF	Output	—	RF signal monitor terminal.	
5	RFVDD	Input	—	RF power terminal.	
6	RFVSS	—	—	RF earth terminal. To be connected to 0 V.	
7	FIN1	Input	—	A+C signal input terminal.	
8	FIN2	Input	—	B+D signal input terminal.	
9	TIN1	Input	—	E signal input terminal.	
10	TIN2	Input	—	F signal input terminal.	
11	VREF	Output	RFVDD/2	VREF voltage output terminal.	
12	REFI	Input	—	Reference supply setting terminal.	
13*	FE	Output	ZHI	FE signal monitor terminal.	
14	TEC	Output	—	LPF capacitor connection terminal for TE signal.	
15*	TE	Output	ZHI	TE signal monitor terminal.	
16*	RFMON	Output	ZHI	RF internal signal monitor terminal.	
17	JITTC	—	—	Capacitor connection terminal for jitter detection.	
18	ADAVDD	Input	—	Power terminal for servo A/D, D/A.	
19	ADAVSS	—	—	Earth terminal for serve A/D, D/A. To be connected to 0 V.	
20	TDO	Output	ADAVDD/2	Output terminal for tracking control. D/A output.	
21	FDO	Output	ADAVDD/2	Output terminal for focus control. D/A output.	
22	SPDO	Output	ADAVDD/2	Output terminal for spindle control. D/A output.	
23	SLDO	Output	ADAVDD/2	Output terminal for sled control. D/A output.	
24*	GPDAC	Output	ADAVDD/2	Servo D/A general-purpose output terminal.	
25	CONT4	Input/Output	Input Mode	General-purpose I/O terminal 4.	Controlled by commands from the microcomputer. When not used, set them as input terminals and connect to 0 V, or set them as output terminals and leave open.
26	CONT5	Input/Output	Input Mode	General-purpose I/O terminal 5.	
27*	SBCK/CONT6	Input/Output	Input Mode	General-purpose I/O terminal 6 or Subcode reading clock input terminal.	
28	SBCK/FG	Input	—	Subcode reading clock input terminal/FG signal input terminal/external emphasis setting terminal. Terminal functions are set by commands. When not used, connect to 0 V.	
29*	DEFECT	Output	L	Defect terminal.	
30*	V/*P	Output	H	Auto switching monitor output terminal for rough servo phase control. “H”: rough servo, “L”: phase servo.	
31*	FSEQ	Output	L	Sync signal detection output terminal. The status changes to “H” when the sync signal detected in EFM and the sync signal of internal generation are identified.	
32*	MONI1	Output	L	Internal signal monitor terminal 1.	
33*	MONI2	Output	L	Internal signal monitor terminal 2.	
34*	MONI3	Output	L	Internal signal monitor terminal 3.	
35*	MONI4	Output	L	Internal signal monitor terminal 4.	
36*	MONI5	Output	L	Internal signal monitor terminal 5.	
37	VSS	—	—	Digital system earth terminal. To be connected to 0 V.	
38	VDD	Input	—	Digital system power terminal.	
39	DOUT	Output	L	Digital OUT output terminal. (EIAJ format)	
40	TEST	Input	L	Input terminal for test. To be connected to 0 V.	
41	LVDD	Input	—	Left channel D/A converter	Power supply for Left channel.
42*	LCHO	Output	LVDD/2		Left channel output.
43	LVSS	—	—		GND for Left channel. Must be connected to 0 V.

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

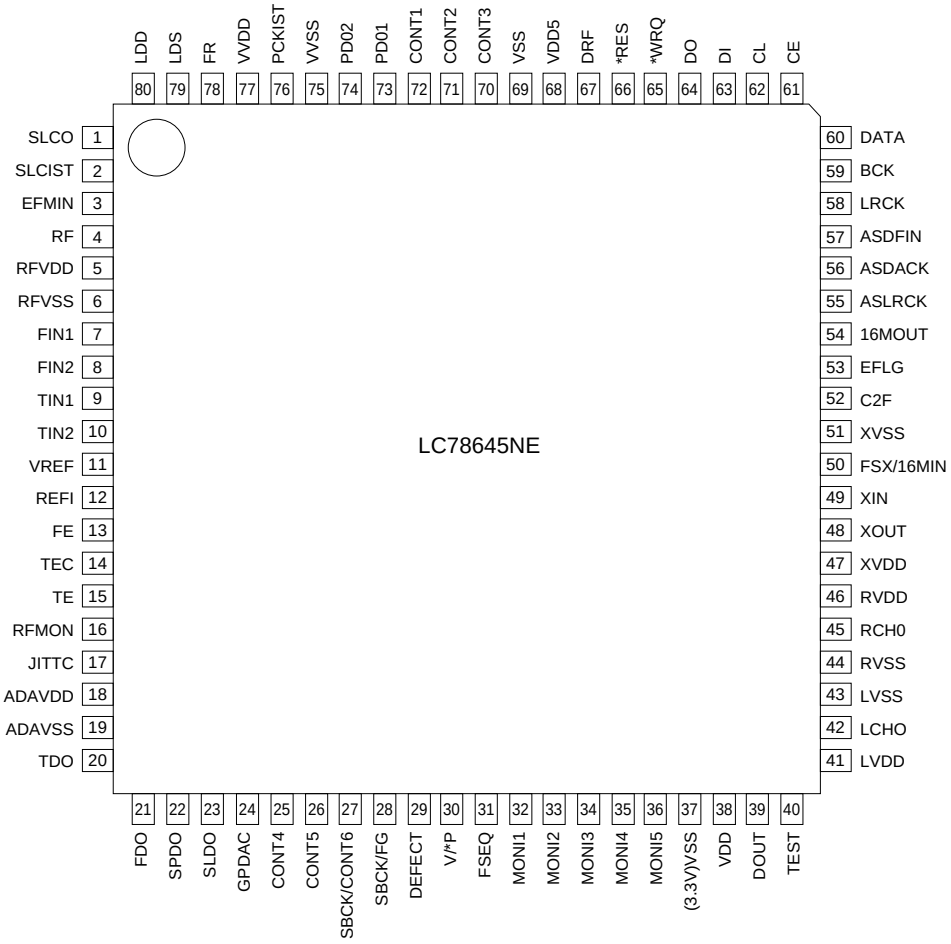
IC1 VHiLC78645NE1: CD Servo (LC78645NE) (2/2)

Pin No.	Terminal Name	Input/Output	Setting in Reset	Function	
44	RVSS	—	—	Right channel D/A converter	GND for Right channel. Must be connected to 0 V.
45*	RCHO	Output	LVDD /2		Right channel output.
46	RVDD	Input	—		Power supply for Right channel.
47	XVDD	Input	—	Crystal Oscillator	Power supply for crystal oscillator.
48	XOUT	Output	—		Connected for the 33.8688 MHz crystal oscillator cement.
49	XIN	Input	—		
50	FSX/16MIN	Input/Output	Input	7.35 kHz Synchronization signal monitor port. or Clock input port for Digital filter & D/A	
51	XVSS	—	—	Crystal Oscillator	GND for crystal oscillator. Must be connected to 0 V.
52*	C2F	Output	H	C2 FLAG monitor port.	
53*	EFLG	Output	L	C1, C2 error corrected monitor port.	
54*	16MOUT	Output	Clock	16.9344 MHz output port.	
55	ASLRCK	Input	—	Anti-shock	Word clock input port. (If this port does not use, must be connect to 0 V.)
56	ASDACK	Input	—		Bit clock input port. (If this port does not use, must be connect to 0 V.)
57	ASDFIN	Input	—		Left/Right channel data input port. (If this port does not use, must be connect to 0 V.)
58	LRCK	Output	L	Digital data	Word clock output port.
59	BCK	Output	L		Bit clock output port.
60	DATA	Output	L		Left/Right channel data output port.
61	CE	Input	—	Microcomputer Interface	Chip enable signal input port.
62	CL	Input	—		Data transfer clock input port.
63	DI	Input	—		Data input port.
64	DO	Output	(H)		Data output port. (N-ch. open drain output.)
65	*WRQ	Output	H		Interruption signal output.
66	*RES	Input	—	Chip reset signal input port. This port must be set LOW after first applied power on.	
67	DRF	Output	L	Focus detection output port.	
68	VDD5	Input	—	Power supply for Microprocessor.	
69	VSS	—	—	GND for digital circuit. Must be connected to 0 V.	
70	CONT3	Input/Output	Input	General purpose port 1.	Controlled with serial data command from micro-computer. When not used, General purpose input/ output terminal 7. Set it as the input terminal and open it by connecting to 0 V, or set it as the output terminal and open it.
71	CONT2	Input/Output	Input	General purpose port 2.	
72	CONT1	Input/Output	Input	General purpose port 3.	
73	PDO1	Output	—	PLL	Internal VCO control phase comparator output port 1.
74	PDO2	Output	Input		Internal VCO control phase comparator output port 2.
75	VVSS	—	—		GND for internal VCO. Must be connected to 0 V.
76	PCKIST	Input	—		PDO output current adjustment resistor connection port.
77	VVDD	Input	—		Power supply for internal VCO.
78	FR	Input	—		VCO frequency range adjustment port.
79	LDS	Input	—	LASER power detected signal input port.	
80	LDD	Output	—	LASER power control signal output port.	

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

Be sure to supply the same potential to each power terminal. (VVDD, ADAVDD, VDD, LVDD, RVDD, XVDD)
Terminal witch is controlled by the power terminal (VDD5 V) for a microcomputer interface :
CE (61 pin), CL (62 pin), DI (63 pin), DO (64 pin), WRQ (65 pin), RES (66 pin), DRF (67 pin)

IC1 VHiLC78645NE1: CD Servo (LC78645NE)



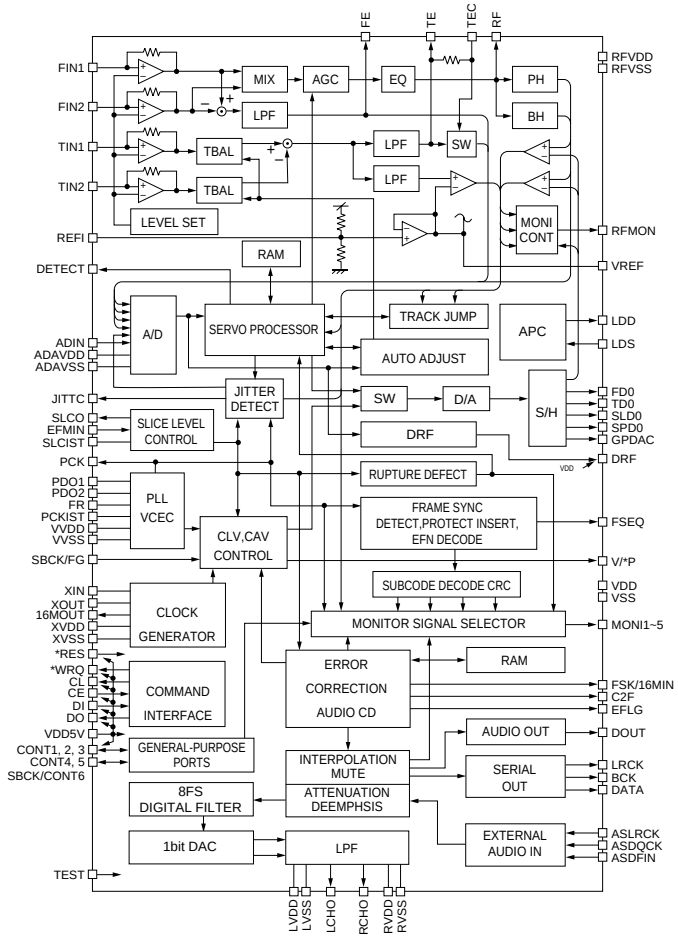
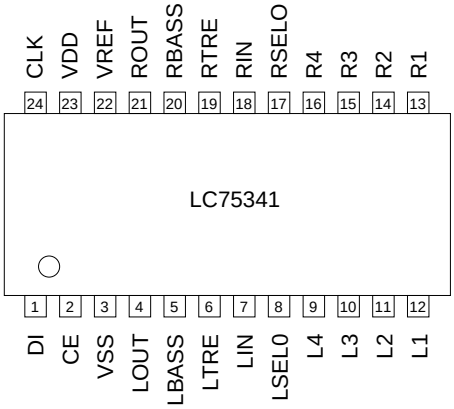


Figure 78 BLOCK DIAGRAM OF IC

IC401 VHiLC75341/-1: Audio Processor (LC75341)

Pin No.	Terminal Name	Function
1	DI	Serial data and clock input terminal for control.
2	CE	Chip enable terminal. When changing from "H" to "L", data is written in the internal latch and each analog switch is turned on. Data transmission is enabled at "H" level.
3	VSS	Ground terminal.
4	LOUT	Bass band filter construction capacitor/resistor connection terminal and bass/treble output terminal.
5	LBASS	Bass band filter capacitor and resistor connection terminal.
6	LTRE	Treble band filter capacitor connection terminal.
7	LIN	L-CH signal input terminal.
8	LSEL0	Input selector output terminal.
9-12 (10*)	L4-L1	Input signal terminal.
13-16 (15*)	R1-R4	Input signal terminal.
17	RSEL0	Input selector output terminal.
18	RIN	R-CH signal input terminal.
19	RTRE	Treble band filter capacitor connection terminal.
20	RBASS	Bass band filter capacitor and resistor connection terminal.
21	ROUT	Bass band filter capacitor/resistor connection terminal and bass/treble output terminal.
22	VREF	0.5 × VDD voltage generation section for analog ground. Connect a capacitor of 10 μF or more between Vref and AVSS (VSS) as a countermeasure against the power supply ripple.
23	VDD	Power supply terminal.
24	CLK	Serial data and clock input terminal for control.

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.


CLK VDD VREF ROUT RBASS RTRE RIN RSELO R4 R3 R2 R1
24 23 22 21 20 19 18 17 16 15 14 13
LC75341
1 2 3 4 5 6 7 8 9 10 11 12
DI CE VSS LOUT LBASS LTRE LIN LSEL0 L4 L3 L2 L1

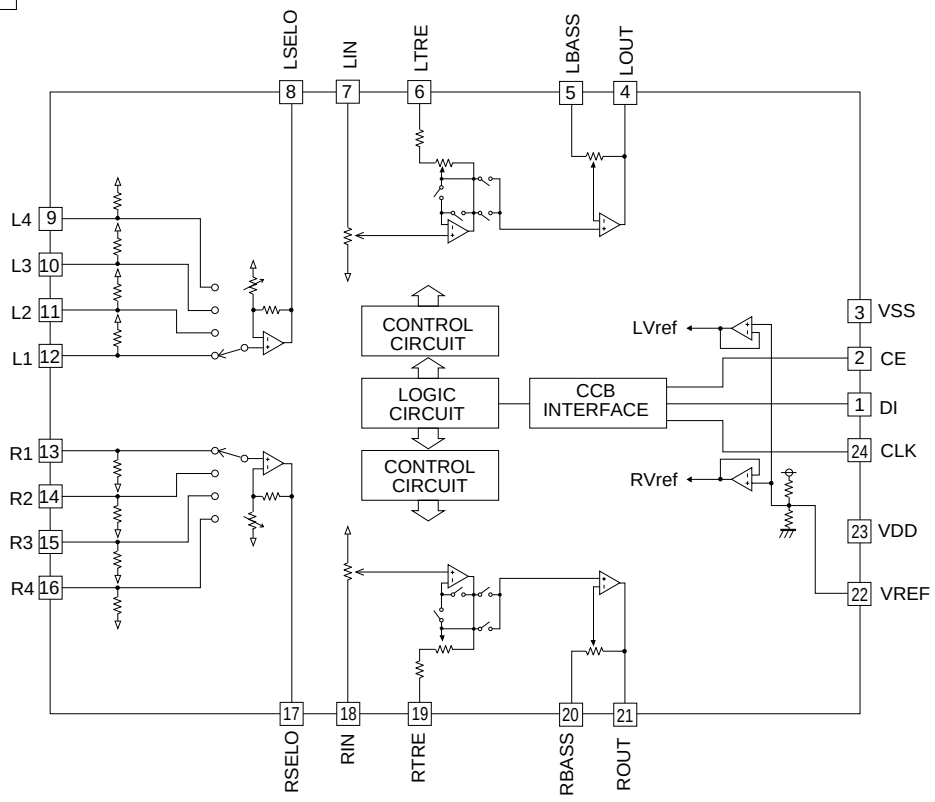


Figure 79 BLOCK DIAGRAM OF IC

MD-E9000H

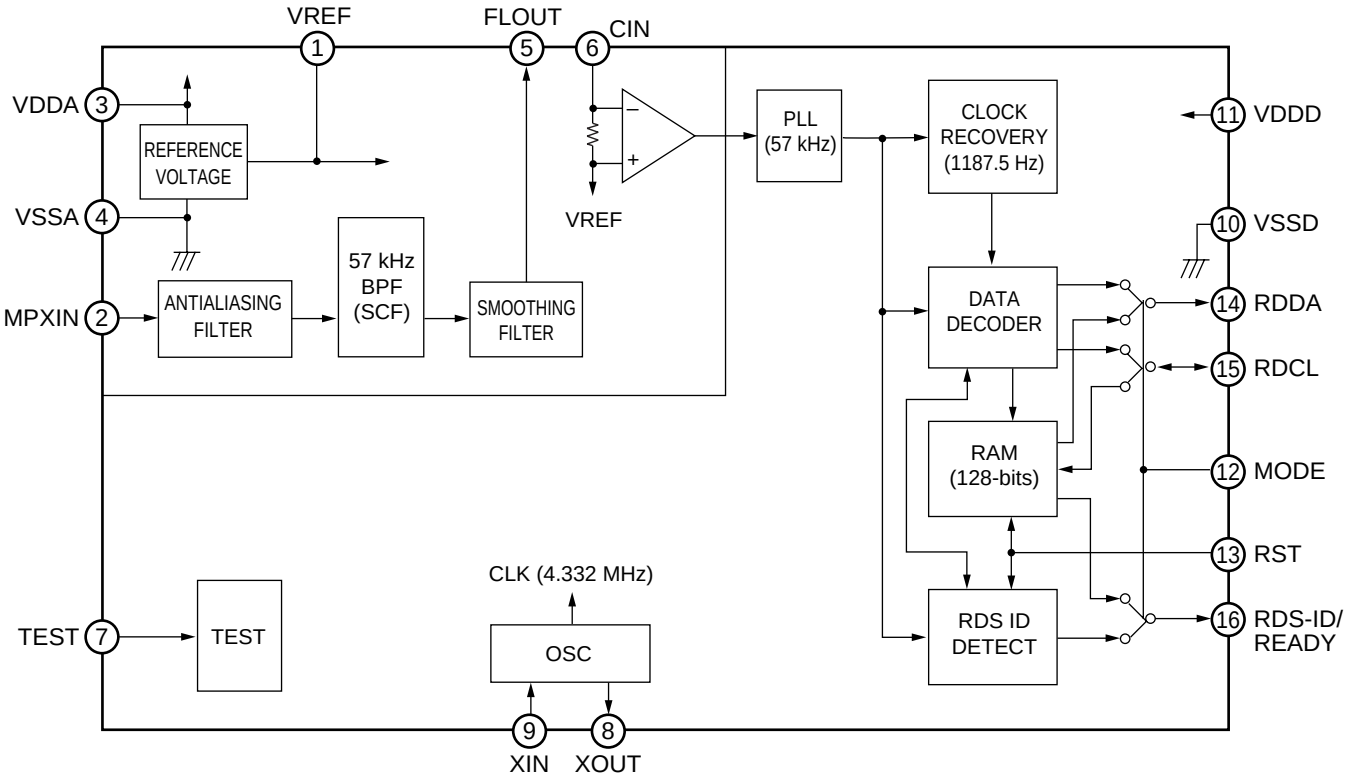
IC701 RH-iX0395AWZZ: System Microcomputer (IX0395AW)

Pin No.	Port Name	Terminal Name	Input/Output	Remarks
1	P77	P_DOWN	Output	Power failure control.
2-4	AN6-AN4	KEY1-KEY3	Input	Key input.
5	AN3	INI	Input	Distination setting.
6	AN2	TUN SM	Input	Tuner signal meter input.
7	P71	T-STBY	Output	Timer indicator.
8	P70	CD_RESET	Output	CD reset.
9	PB3	CD_WRQ	Input	CD sub-q transmission control.
10	PB2	CD_DRF	Input	CD focus on detection.
11	P57	CD_CE	Output	CD chip enable.
12	P56	CD_CL	Output	CD clock.
13	P55	CD_DI	Output	CD command output.
14	P54	CD_DO	Input	CD data input.
15	P53	MD_ST-ID	Output	MD syncro start signal.
16	P52	MD_SERCH	Output	MD search signal output.
17	P51	MD_PCONT	Input	MD power lock output.
18	P50	MD_RESET	Output	MD reset.
19	SRDY1	MD_DSTB	Input	MD strobe input.
20	SCLK1	MD_DSCK	Output	MD clock output.
21	SOUT1	MD_KDATA	Output	MD key data.
22	SIN1	MD_DATA	Input	MD data input.
23	P63	P_MUTE	Output	System (Power IC) mute control.
24	P62	P_CONT	Output	Power IC control.
25	P61	RDS_RDY	Input	RDS ready output.
26	P60	RDS_RST	Output	RDS RAM reset.
27	P47	RDS_DATA	Input	RDS data input.
28	P46	RDS_CLK	Output	RDS clock output. (Slave mode)
29	INT1	P-IN	Input	Power failure detection.
30*	P44	FAN_CONT	Output	Fan control.
31	P43	RLY_CONT	Output	AC relay out control.
32	INT2	RX-IN	Input	Remocon signal in.
33*	P41	SPAN	Input	Span select input.
34	P40	No use	Input	Connect to ground.
35	$\overline{\text{RESET}}$	RESET	Input	Reset input.
36	PB1	CD_OPEN-SW	Input	CD open sw detection.
37	PB0	CD_CLOSE-SW	Input	CD close sw detection.
38	XIN	XIN	Input	System clock input. (8.3886 MHz)
39	XOUT	XOUT	Output	System clock output. (8.3886 MHz)
40	VSS	VSS	Input	Ground voltage.
41	P27	TUN_DO	Input	Tuner data input.
42	P26	T/V_CE	Output	Tuner chip enable.
43	P25	T/V_CL	Output	Tuner clock.
44	P24	T/V_DI	Output	Tuner command output.
45	P23	ILU_LED	Output	Illumination LED.
46*, 47*	P22/DIG18, P21/DIG17	No use	Output	Open
48-54	DIG16-DIG10	DIG12-DIG6	Output	FL digit output.
55-60	D9-D4	DIG5-DIG0	Output	FL digit output.
61-64	S35-S32	SEG35-SEG32	Output	FL segment output.
65-90	SEG31-SEG6	SEG31-SEG6	Output	FL segment output.
91	VCC	VCC	Input	Power supply input.
92-97	SEG5-SEG0	SEG5-SEG0	Output	FL segment output.
98	VEE	VEE	Input	Pull down power supply input.
99	AVSS	AVSS	Input	A/D ground.
100	VREF	VREF	Input	A/D voltage.

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

ICT21 VHiLC72723/-1: RDS Decorder (LC72723)

Pin No.	Terminal Name	Input/Output	Function
1	VREF	Output	Reference voltage output. (Vdda/2)
2	MPXIN	Input	Baseband (multiplexed) signal input.
3	VDDA	Input	Analog power supply. (+5 V)
4	VSSA	—	Analog ground.
5	FLOUT	Output	Subcarrier output. (filter output)
6	CIN	Input	Subcarrier input. (comparator input)
7	TEST	Input	Test input.
8	XOUT	Output	Crystal oscillator output. (4.332 MHz)
9	XIN	Input	Crystal oscillator input. (external reference signal input)
10	VSSD	—	Digital ground.
11	VDDD	Input	Digital power supply. (+5 V)
12	MODE	Input	Read mode setting. (0: master, 1: slave)
13	RST	Input	RDS-ID/RAM reset. (positive polarity)
14	RDDA	Output	RDS data output.
15	RDCL	Input/Output	RDS clock output. (master mode) RDS clock input. (slave mode)
16	RDS-ID/READY	Output	RDS-ID/READY output. (negative polarity)



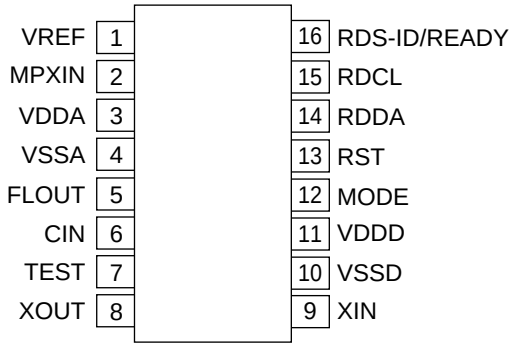


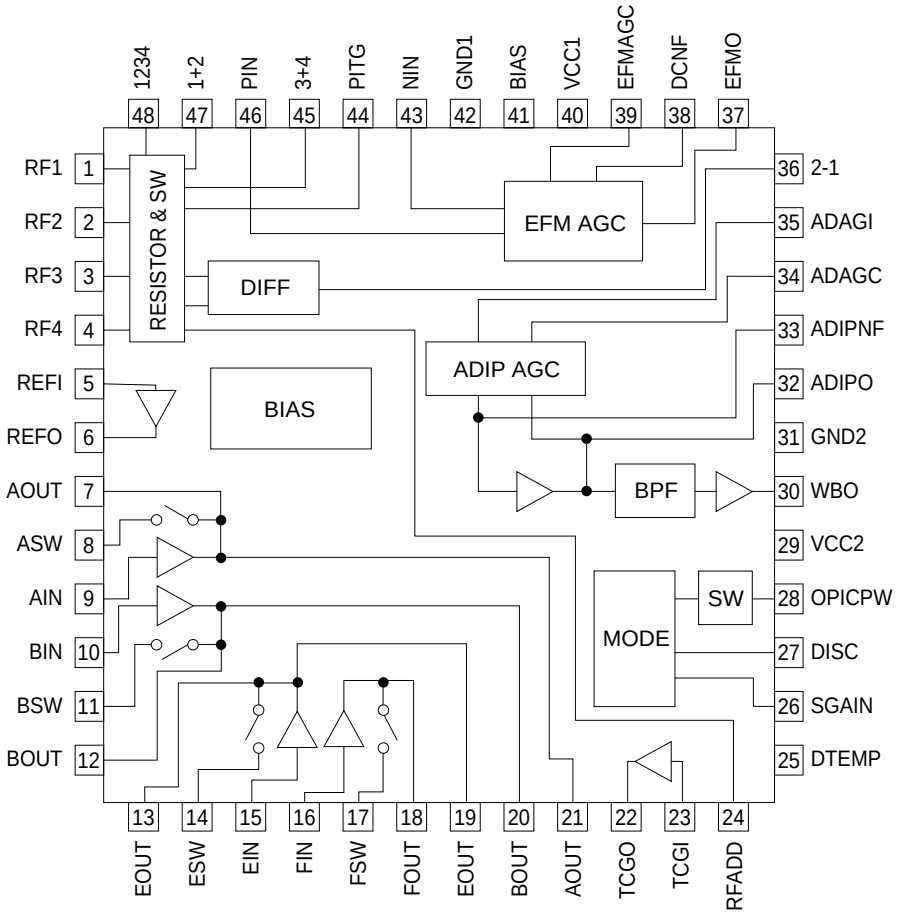
Figure 81 BLOCK DIAGRAM OF IC

IC1101 VHiiR3R58M/-1: RF Signal Processor (IR3R58M)

Pin No.	Terminal Name	Function
1	RF1	RF signal input terminal 1. Input of RF signal output of pickup.
2	RF2	RF signal input terminal 2. Input of RF signal output of pickup.
3	RF3	RF signal input terminal 3. Input of RF signal output of pickup.
4	RF4	RF signal input terminal 4. Input of RF signal output of pickup.
5	REFI	Reference voltage amplifier input terminal.
6	REFO	Reference voltage amplifier output terminal.
7	AOUT	Output terminal 1 of signal amplifier for servo (focus servo system).
8	ASW	Output terminal 2 of signal amplifier for servo (focus servo system).
9	AIN	Reverse input terminal of signal amplifier for servo (focus servo system).
10	BIN	Reverse input terminal of signal amplifier for servo (focus servo system)
11	BSW	Output terminal 2 of signal amplifier for servo (focus servo system).
12	BOUT	Output terminal 1 of signal amplifier for servo (focus servo system).
13	EOUT	Output terminal 1 of signal amplifier for servo (tracking servo system).
14	ESW	Output terminal 2 of signal amplifier for servo (tracking servo system).
15	EIN	Reverse input terminal of signal amplifier for servo (tracking servo system).
16	FIN	Reverse input terminal of signal amplifier for servo (tracking servo system).
17	FSW	Output terminal 2 of signal amplifier for servo (tracking servo system).
18	FOUT	Output terminal 1 of signal amplifier for servo (tracking servo system).
19	EOUT	Output terminal 1 of signal amplifier for servo (tracking servo system).
20	BOUT	Output terminal 1 of signal amplifier for servo (focus servo system).
21	AOUT	Output terminal 1 of signal amplifier for servo (focus servo system).
22	TCGO	Group mode: Track cross detection signal amplifier output terminal.
23	TCGI	Group mode: Track cross detection signal amplifier input terminal.
24	RFADD	Resistance addition output terminal of RF1 - RF4.
25	DTEMP	Chip temperature detection terminal.
26	SGAIN	Switch section control terminal of amplifier for servo.
27	DISC	Pit mode, groove mode selecting control terminal.
28*	OPICPW	Power output terminal for OPIC.
29	VCC2	Power supply terminal of digital section and power section.
30*	WBO	Comparator output terminal for binary coded ADIP signal.
31	GND2	GND terminal of digital section and power section.
32	ADIPO	ADIP signal pre-amplifier output terminal.
33*	ADIPNF	ADIP signal AGC amplifier output terminal.
34	ADAGC	Smoothing capacitor connection terminal for ADIP signal AGC.
35	ADAGI	ADIP signal AGC amplifier input terminal.
36	2-1	Differential signal of RF1, RF2.
37	EFMO	RF signal AGC amplifier output terminal.
38	DCNF	Smoothing capacitor connection terminal for RF signal AGC amplifier reference voltage.
39	EFMAGC	Smoothing capacitor connection terminal for RF signal AGC.
40	VCC1	Analog section power supply terminal.
41	BIAS	Bias input terminal.
42	GND1	Analog section GND terminal.
43	NIN	RF signal AGC amplifier reverse input terminal.
44	PITG	Pit mode: Ground terminal.
45	3 + 4	Groove mode: Resistance addition output terminal of RF3 and RF4.
46	PIN	RF signal AGC amplifier non-reverse input terminal.
47	1 + 2	Groove mode: Resistance addition output terminal of RF1 and RF2.
48	1234	Pit mode: Resistance addition output terminal of RF1 - RF4.

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

IC1101 VHiiR3R58M/-1: RF Signal Processor (IR3R58M)



IC1201 VHiLR37816A-1: Endec/Atrac (LR37816A)

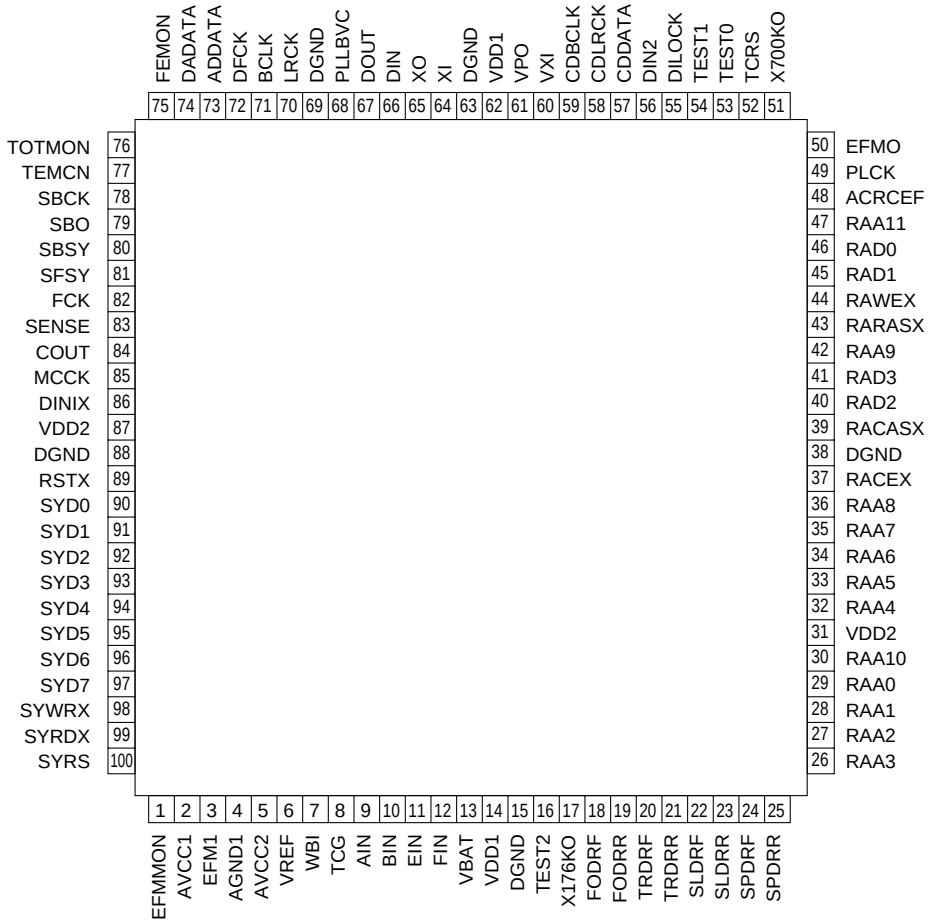


Figure 83 BLOCK DIAGRAM OF IC

IC1201 VHiLR37816A-1: Endec/Atrac (LR37816A) (1/2)

Pin No.	Terminal Name	Input/Output	Function
1*	EFMMON	Output	EFM monitor output.
2	AVCC1	Input	Analog power supply (for EFM system 8AD, 8DA).
3	EFMI	Input	EFM signal input from RF amplifier.
4	AGND1	—	Analog GND.
5	AVCC2	Input	Analog power supply (for servo system, ADIP system 1bit AD).
6	VREF	Input	Reference voltage input for RF amplifier.
7	WBI	Input	ADIP wobble signal.
8	TCG	Input	Track cross signal.
9	AIN	Input	Focus error signal A.
10	BIN	Input	Focus error signal B.
11	EIN	Input	Tracking error signal E.
12	FIN	Input	Tracking error signal F.
13	VBAT	Input	Power voltage detection signal for constant voltage servo.
14	VDD1	Input	Internal digital power supply.
15	DGND	—	Digital GND.
16	TEST2	Input	Input for test. Connected to GND if used normally.
17*	X176KO	Output	Clock output. f=176.4 kHz (4 fs)
18*	FODRF	Output	Focus servo forward output. PWM.
19	FODRR	Output	Focus servo reverse output. PWM.
20*	TRDRF	Output	Tracking servo forward output. PWM.
21	TRDRR	Output	Tracking servo reverse output. PWM.
22*	SLDRF	Output	Slide servo forward output. PWM.
23	SLDRR	Output	Slide servo reverse output. PWM.
24*	SPDRF	Output	Spindle servo forward output. PWM.
25	SPDRR	Output	Spindle servo reverse output.
26	RAA3	Output	Address output to external D-RAM. ADR3
27	RAA2	Output	Address output to external D-RAM. ADR2
28	RAA1	Output	Address output to external D-RAM. ADR1
29	RAA0	Output	Address output to external D-RAM. ADR0 (LSB)
30*	RAA10	Output	Address output to external D-RAM. ADR10 (MSB)
31	VDD2	Input	Power supply for interface.
32	RAA4	Output	Address output to external D-RAM. ADR4
33	RAA5	Output	Address output to external D-RAM. ADR5
34	RAA6	Output	Address output to external D-RAM. ADR6
35	RAA7	Output	Address output to external D-RAM. ADR7
36	RAA8	Output	Address output to external D-RAM. ADR8
37	RAOEX	Output	Data output enable signal output to external D-RAM
38	DGND	—	Digital GND.
39	RACASX	Output	Column address strobe signal output to external D-RAM.
40	RAD2	Input/Output	Data input and output with external D-RAM. D2
41	RAD3	Input/Output	Data input and output with external D-RAM. D3 (MSB)
42	RAA9	Output	Address output to external D-RAM. ADR9
43	RARASX	Output	Low address strobe signal output to external D-RAM.
44	RAWEX	Output	Data write enable signal output to external D-RAM.
45	RAD1	Input/Output	Data input and output with external D-RAM. D1
46	RAD0	Input/Output	Data input and output with external D-RAM. D0 (LSB)
47*	RAA11	Output	Address output to external D-RAM. ADR11 (MSB 64 Mbit)
48*	ACRCER	Output	CRC error flag monitor output of ADIP.
49*	PLCK	Output	Playback mode: EFM PLL clock output.
50	EFM0	Output	Recording mode: EFM signal output. Playback mode: C1F (C1 error flag) monitor output.
51*	X700KO	Output	Clock output. f= 705.6 kHz

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

IC1201 VHiLR37816A-1: Endec/Atrac (LR37816A) (2/2)

Pin No.	Terminal Name	Input/Output	Function
52*	TCRS	Output	Track cross signal.
53	TEST0	Input	Input for test. Connected to GND if used normally.
54	TEST1	Input	Input for test. Connected to GND if used normally.
55	DILOCK	Output	DIN lock detection.
56	DIN2	Input/Output	Digital input signal. Expansion port 0.
57	CDDATA	Input/Output	Data input for dubbing. Expansion output port 1.
58	CDLRCK	Input/Output	LR clock input for dubbing. Expansion output port 2.
59	CDBCLK	Input/Output	Bit clock input for dubbing. Expansion output port 3.
60	VXI	Input	PLL clock input for variable pitch.
61*	VPO	Output	PLL phase error output for variable pitch.
62	VDD1	Input	Internal digital power supply.
63	DGND	—	Digital GND.
64	XI	Input	Transmit circuit input. 33.8688 MHz
65	XO	Output	Transmit circuit input. 33.8688 MHz
66	DIN	Input	Digital input signal.
67*	DOUT	Output	Digital output signal.
68	PLLBVG	Output	For Internal PLL. Terminal for external capacitor.
69	DGND	—	Digital GND.
70	LRCK	Output	L-ch, R-ch selection output of music data.
71	BCLK	Output	Shift lock of music data.
72	DFCK	Output	Clock for AD/DA converter digital filter. 256 Fs.
73	ADDATA	Input	Sound data input.
74	DADATA	Output	Sound data output.
75*	FEMON	Output	Focus error signal monitor output. Series resistance 10 - 100 kohm built-in.
76*	TOTMON	Output	Total signal monitor output. Series resistance 10 - 100 kohm built-in.
77*	TEMON	Output	Tracking error signal monitor output. Series resistance 10 - 100 kohm built-in.
78	SBCK	Input/Output	DIN subcode read clock. Expansion port 4.
79	SBO	Output	DIN subcode serial data. Expansion port 5.
80	SBSY	Output	DIN subcode block synchronous signal. Expansion port 6.
81	SFSY	Output	DIN subcode frame synchronous signal. Expansion port 7.
82	FOK	Output	Focus OK detection signal. “0”: focus OK.
83	SENSE	Output	Servo condition detection signal.
84	COUT	Output	Track cross signal output.
85	MCCK	Output	Clock output for microcomputer.
86	DINTX	Output	Interrupt request output terminal to system computer interface.
87	VDD2	Input	Power supply for interface.
88	DGND	—	Digital GND.
89	RSTX	Input	Chip reset input. Reset by L. (Note)
90	SYD0	Input/Output	Data bus terminal of system computer interface. (LSB)
91-96	SYD1-SYD6	Input/Output	Data bus terminal of system computer interface.
97	SYD7	Input/Output	Data bus terminal of system computer interface. (MSB)
98	SYWRX	Input	Resister write pulse input of system computer interface.
99	SYRDX	Input	Resister read pulse input of system computer interface.
100	SYRS	Input	Resister selection input of system computer interface.

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

Note: Set RSTX to L when turning on the power or after turning on the power.

IC1202 RH-iX2474AFZZ: 4Mbit D-RAM (IX2474AF)

Pin No.	Terminal Name	Function
1, 2	DQ0, DQ1	Data input/Data output.
3	$\overline{WE}$	Write enable.
4	$\overline{RAS}$	Row address strobe.
5	A9	Address input.
6-9	A0-A3	Address input.
10	VDD	Power (3.3 V)
11-15	A4-A8	Address input.
16	$\overline{OE}$	Output enable.
17	$\overline{CAS}$	Column address strobe.
18, 19	DQ2, DQ3	Data input/Data output.
20	VSS	Ground (0 V)

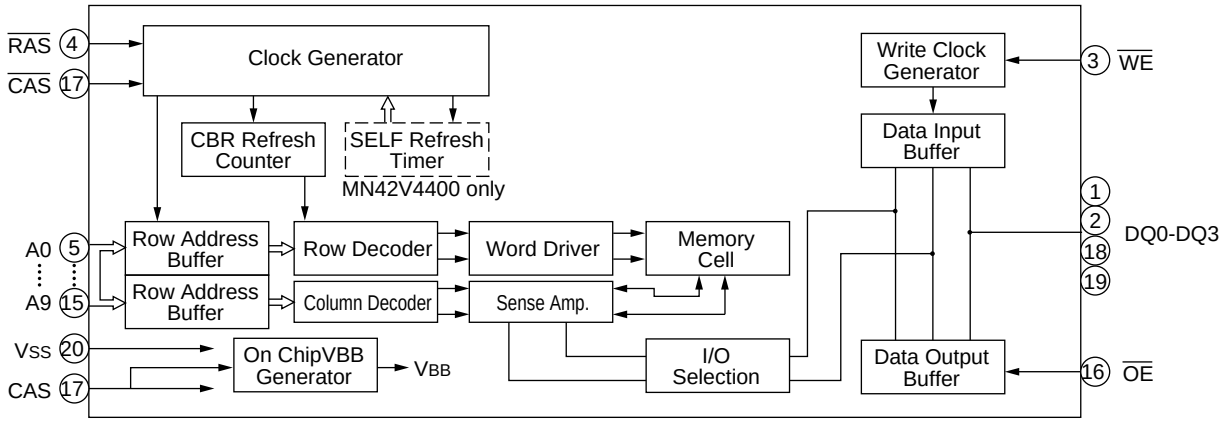


Figure 86-1 BLOCK DIAGRAM OF IC

IC1301 VHiFTD2005/-1: Head Driver (FTD2005)

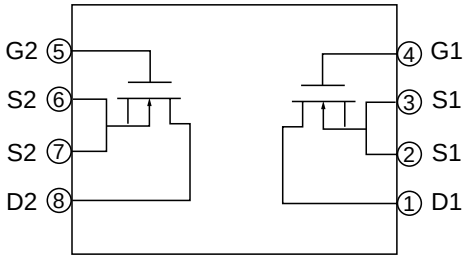


Figure 86-2 BLOCK DIAGRAM OF IC

IC1302 VHiCPH5608/-1: Head Driver (CPH5608)

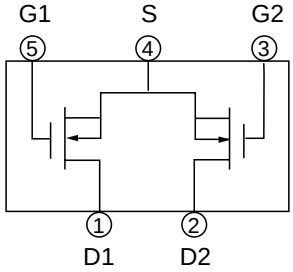


Figure 86-3 BLOCK DIAGRAM OF IC

IC1402 VHi58X2402T-1: EEPROM (58X2402T)

Pin No.	Terminal Name	Function
1-3	A0-A2	Device address.
4	VSS	Ground
5	SDA	Serial data input/output.
6	SCL	Serial clock input.
7	WP	Write protect.
8	VCC	Power supply.

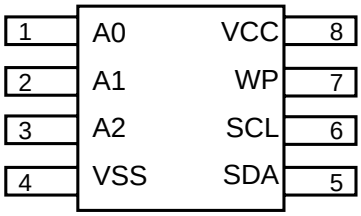


Figure 86-4 BLOCK DIAGRAM OF IC

IC1401 RH-iX0410AWZZ: MD System Microcomputer (IX0410AW) (1/2)

Pin No.	Terminal Name	Input/Output	Function
1	$\overline{4M}$/16M	Output	4M/16M DRAM selection input.
2	64M	Output	64M DRAM selection input.
3	LDVAR	Output	LDVAR (laser power adjustment output)
4*	ADJS	Output	ADJS (for automatic adjustment step check)
5	CIN	Input	CIN (track count signal input)
6*	N.C.	—	Not used.
7	UNLOCK	Input	ERR input. (UNLOCK of MD LSI monitor PLL)
8	BYTE	Input	GND
9	CNVSS	Input	GND
10*	STID OUT	Output	ST-ID output.
11*	SEACH OUT	Output	MD search output.
12	RESET	Input	RESET input.
13*	N.C.	Output	Clock output.
14	VSS	—	GND
15	MCCK	Input	EXTAL (8.4672 MHz)
16	VCC	Input	+3.15 V
17	P85	Input	Input output port P85.
18	DINT	Input	DINT (Interrupt input from MD-LSI)
19	SFSY	Input	Subcode communication frame synchro Interrupt input.
20	ST-ID	Input	ST-ID input. (MD-ON)
21	SERCH	Input	CD search input. (Synchronous REC interrupt input)
22	MDRSW	Output	MD RSW output.
23*	CDB SEL	Output	CD BLK SEL output.
24	DSENSE	Input	DSENSE (servo sense input from MD-LSI)
25	P-DOWN	Input	P-DOWN (blackout detection)
26	HD ON	Output	HDON (magnetic head power ON/OFF output)
27	EEPRO	Output	EEPROM protect release output.
28	HFON	Output	HFON
29	EEPK	Output	EEPROM serial clock output.
30	EEPD	Input/Output	EEPROM data input output.
31	MD DATA	Output	MD computer data input output.
32	K DATA	Input	System computer data input.
33	DSCK	Input	System computer clock input.
34	DSTB	Output	DSTB (system computer communication possible and during communication)
35*	N.C.	Output	Not used.
36	SBO	Input	Subcode serial data input.
37	SBCK	Output	Subcode communication serial clock output.
38	DISC	Output	DISC
39	R/P	Output	R/P output. (REC/PLAY selection)
40	FOK	Input	FOK (focus servo condition monitor input)
41	FLASH L	Input	Flash write selection.
42	SGAIN	Output	SGAIN
43	SYRS	Output	MD LSI resister select signal output.
44	SYRD	Output	SYRD (MD-LSI read signal output)
45	SYWR	Output	SYWR (MD-LSI write signal output)
46	FLASH H	Input	Flash write selection.
47	SYS D7	Input/Output	SYS D7 (data bus 7)
48	SYS D6	Input/Output	SYS D6 (data bus 6)
49	SYS D5	Input/Output	SYS D5 (data bus 5)
50	SYS D4	Input/Output	SYS D4 (data bus 4)
51	SYS D3	Input/Output	SYS D3 (data bus 3)

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

IC1401 RH-iX0410AWZZ: MD System Microcomputer (IX0410AW) (2/2)

Pin No.	Terminal Name	Input/Output	Function
52	SYS D2	Input/Output	SYS D2 (data bus 2)
53	SYS D1	Input/Output	SYS D1 (data bus 1)
54	SYS D0	Input/Output	SYS D0 (data bus 0)
55*	P37	Output	Input output port P37.
56*	P36	Output	Input/output port P36.
57*	P35	Output	Input/output port P35.
58*	P34	Output	Input/output port P34.
59*	P33	Output	Input/output port P33.
60*	P32	Output	Input/output port P32.
61	P31	Output	Input/output port P31.
62	VCC	Input	+3.15 V
63	INNSW	Input	Pick most inner periphery detection input.
64	GND	—	GND
65	L3 DATA	Output	L3 DATA (soft serial communication, 2 mode presence, LSB first)
66	L3 MODE	Output	L3 MODE (soft serial communication, 2 mode presence, LSB first)
67	L3 CLK	Output	L3 CLK (soft serial communication, 2 mode presence, LSB first)
68*	P24	Output	Input output port P24.
69*	P23	Output	Input output port P23.
70	PCNT0	Output	PCNT0 output.
71*	LAST	Output	LAST
72	LD ON	Output	LDON output. (H : ON)
73	$\overline{A}$/B	Output	ANLPTR output. ADC/DAC selection input.
74	SBSY	Output	Subcode communication block synchro input.
75*	DAP ON	Output	DAPON output. (for CK)
76*	DFS0	Output	DFS0 output.
77*	DFS1	Output	DFS1 output.
78	P12	Output	Input/output port P12.
79	P11	Output	Input/output port P11
80	XRST	Output	XRST (system reset output)
81*	AD MUTE	Output	ADMUTE output. (for CK)
82	LD+	Output	Loading motor + side control output.
83	LD-	Output	Loading motor - side control output.
84*	MUTE	Output	MUTE output.
85*	RAST	Output	RAST
86*	TEST2	Input	TEST 2
87*	TEST1	Input	TEST 1
88*	TEST0	Input	TEST 0
89	AVCK3	Input	AVCK3 (motor driver power monitor input)
90	AVCK2	Input	AVCK2 (AD/DA section 3.1 V monitor input)
91	AVCK1	Input	AVCK1 (head circuit power monitor input)
92	DTEMP	Input	DTEMP (temperature detection input)
93	MINF	Input	MINF (disc type/REC input/mecha position)
94*	TEST K1	Input	TEST K1
95*	TEST K2	Input	TEST K2
96	GND	—	GND
97*	N.C.	—	Not used.
98	VREF	Input	+3.15 V
99	AVCC	Input	+3.15 V
100	PR	Input	Playback/recording unit setting input.

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

IC1701 VHiUDA1345/-1: AD/DA Converter (UDA1345)

Pin No.	Terminal Name	Function
1	VSSA (ADC)	AD converter analog ground.
2	VDDA (ADC)	AD converter analog power.
3	VINL	AD converter input. (left)
4	VREF (A)	AD converter reference voltage.
5	VINR	AD converter input. (right)
6	VADCN	AD converter reference voltage N.
7	VADCP	AD converter reference voltage P.
8*	MC1	Mode control 1. (Pulled-down)
9*	MP1	Multipurpose pin 1.
10	VDDD	Digital power.
11	VSSD	Digital ground
12	SYSCLK	System clock 256 fs, 384 fs, 512 fs.
13	MP2	Multipurpose pin 2 .
14	MP3	Multipurpose pin 3 .
15	MP4	Multipurpose pin 4 .
16	BCK	Bit clock input.
17	WS	Word select input.
18	DATAO	Data output.
19	DATAI	Data input
20*	MP5	Multipurpose pin 5. (Pulled-down)
21*	MC2	Mode control 2. (Pulled-down)
22	VSSA (DAC)	DA converter analog ground.
23	VDDA (ADC)	DA converter analog power.
24	VOUTR	DA converter output. (right)
25	VDDO	Opeamp power.
26	VOUTL	DA converter output. (left)
27	VSSO	Opeamp ground.
28	VREF (D)	AD converter reference voltage.

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

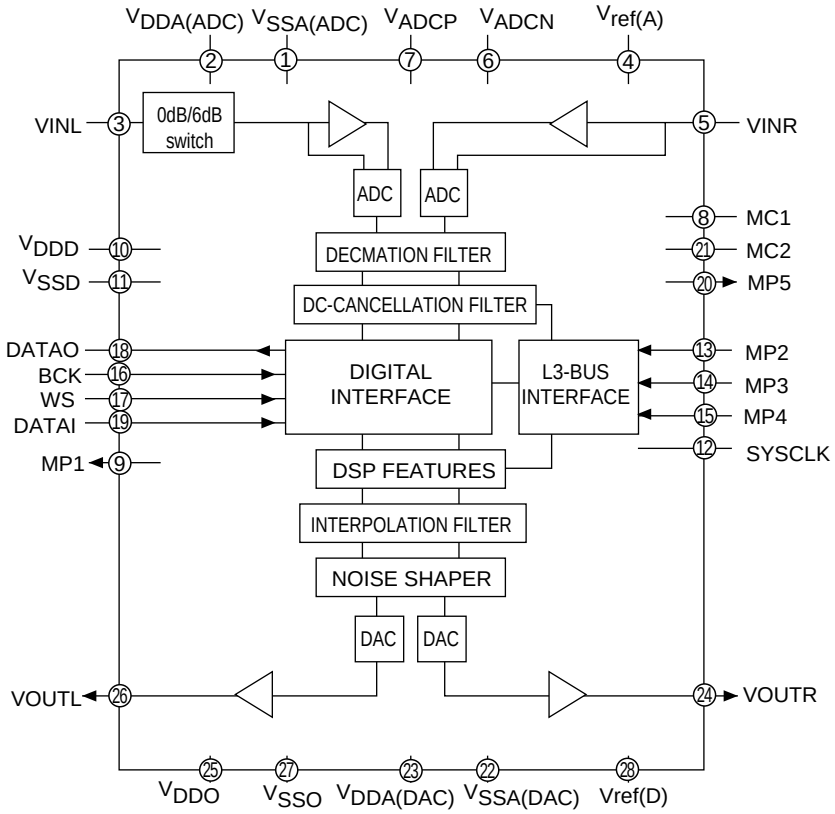
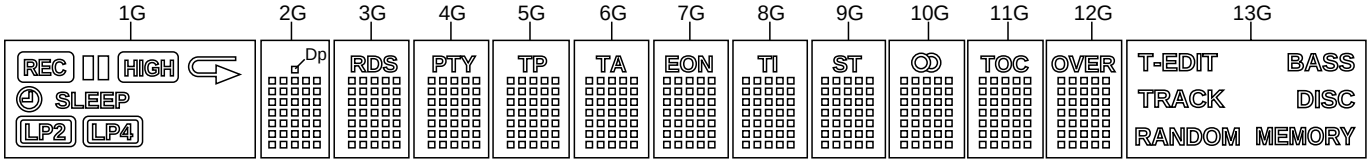
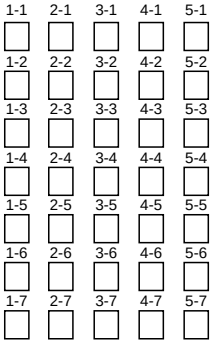


Figure 89 BLOCK DIAGRAM OF IC

FL DISPLAY

FL701: VVKST48GNK/-1





[2G~12G]

ANODE CONNECTION

	1G	2G	3G	4G	5G	6G	7G	8G	9G	10G	11G	12G	13G
P1	REC	Dp	RDS	PTY	TP	TA	EON	TI	ST	◎	TOC	OVER	T-EDIT
P2	▯▯	1–1	1–1	1–1	1–1	1–1	1–1	1–1	1–1	1–1	1–1	1–1	BASS
P3	HIGH	2–1	2–1	2–1	2–1	2–1	2–1	2–1	2–1	2–1	2–1	2–1	TRACK
P4	⇨	3–1	3–1	3–1	3–1	3–1	3–1	3–1	3–1	3–1	3–1	3–1	DISC
P5	⏎	4–1	4–1	4–1	4–1	4–1	4–1	4–1	4–1	4–1	4–1	4–1	RANDOM
P6	SLEEP	5–1	5–1	5–1	5–1	5–1	5–1	5–1	5–1	5–1	5–1	5–1	MEMORY
P7	LP2	1–2	1–2	1–2	1–2	1–2	1–2	1–2	1–2	1–2	1–2	1–2	—
P8	LP4	2–2	2–2	2–2	2–2	2–2	2–2	2–2	2–2	2–2	2–2	2–2	—
P9	—	3–2	3–2	3–2	3–2	3–2	3–2	3–2	3–2	3–2	3–2	3–2	—
P10	—	4–2	4–2	4–2	4–2	4–2	4–2	4–2	4–2	4–2	4–2	4–2	—
P11	—	5-2	5-2	5-2	5-2	5-2	5-2	5-2	5-2	5-2	5-2	5-2	—
P12	—	1–3	1–3	1–3	1–3	1–3	1–3	1–3	1–3	1–3	1–3	1–3	—
P13	—	2–3	2–3	2–3	2–3	2–3	2–3	2–3	2–3	2–3	2–3	2–3	—
P14	—	3–3	3–3	3–3	3–3	3–3	3–3	3–3	3–3	3–3	3–3	3–3	—
P15	—	4–3	4–3	4–3	4–3	4–3	4–3	4–3	4–3	4–3	4–3	4–3	—
P16	—	5–3	5–3	5–3	5–3	5–3	5–3	5–3	5–3	5–3	5–3	5–3	—
P17	—	1–4	1–4	1–4	1–4	1–4	1–4	1–4	1–4	1–4	1–4	1–4	—
P18	—	2–4	2–4	2–4	2–4	2–4	2–4	2–4	2–4	2–4	2–4	2–4	—
P19	—	3–4	3–4	3–4	3–4	3–4	3–4	3–4	3–4	3–4	3–4	3–4	—
P20	—	4–4	4–4	4–4	4–4	4–4	4–4	4–4	4–4	4–4	4–4	4–4	—
P21	—	5–4	5–4	5–4	5–4	5–4	5–4	5–4	5–4	5–4	5–4	5–4	—
P22	—	1–5	1–5	1–5	1–5	1–5	1–5	1–5	1–5	1–5	1–5	1–5	—
P23	—	2–5	2–5	2–5	2–5	2–5	2–5	2–5	2–5	2–5	2–5	2–5	—
P24	—	3–5	3–5	3–5	3–5	3–5	3–5	3–5	3–5	3–5	3–5	3–5	—
P25	—	4–5	4–5	4–5	4–5	4–5	4–5	4–5	4–5	4–5	4–5	4–5	—
P26	—	5–5	5–5	5–5	5–5	5–5	5–5	5–5	5–5	5–5	5–5	5–5	—
P27	—	1–6	1–6	1–6	1–6	1–6	1–6	1–6	1–6	1–6	1–6	1–6	—
P28	—	2–6	2–6	2–6	2–6	2–6	2–6	2–6	2–6	2–6	2–6	2–6	—
P29	—	3–6	3–6	3–6	3–6	3–6	3–6	3–6	3–6	3–6	3–6	3–6	—
P30	—	4–6	4–6	4–6	4–6	4–6	4–6	4–6	4–6	4–6	4–6	4–6	—
P31	—	5–6	5–6	5–6	5–6	5–6	5–6	5–6	5–6	5–6	5–6	5–6	—
P32	—	1–7	1–7	1–7	1–7	1–7	1–7	1–7	1–7	1–7	1–7	1–7	—
P33	—	2–7	2–7	2–7	2–7	2–7	2–7	2–7	2–7	2–7	2–7	2–7	—
P34	—	3–7	3–7	3–7	3–7	3–7	3–7	3–7	3–7	3–7	3–7	3–7	—
P35	—	4–7	4–7	4–7	4–7	4–7	4–7	4–7	4–7	4–7	4–7	4–7	—
P36	—	5–7	5–7	5–7	5–7	5–7	5–7	5–7	5–7	5–7	5–7	5–7	—

SHARP PARTS GUIDE

MD COMPACT COMPONENT SYSTEM

MODEL MD-E9000H

MD-E9000H MD Compact Component System consisting of MD-E9000H (main unit) and CP-E9000H (speaker system).

"HOW TO ORDER REPLACEMENT PARTS"

To have your order filled promptly and correctly, please furnish the following information.

1. MODEL NUMBER
2. REF. No.
3. PART NO.
4. DESCRIPTION

★ MARK: SPARE PARTS-DELIVERY SECTION

For U.S.A. only

Contact your nearest SHARP Parts Distributor to order.

For location of SHARP Parts Distributor,
Please call Toll-Free;
1-800-BE-SHARP

Explanation of capacitors/resistors parts codes

Capacitors

VCC ..... Ceramic type
VCK..... Ceramic type
VCT..... Semiconductor type
VC • • MF ..... Cylindrical type (without lead wire)
VC • • MN..... Cylindrical type (without lead wire)
VC • • TV..... Square type (without lead wire)
VC • • TQ ..... Square type (without lead wire)
VC • • CY ..... Square type (without lead wire)
VC • • CZ ..... Square type (without lead wire)
VC • • • • • • • • • J .. The 13th character represents capacity difference.
("J" ±5%, "K" ±10%, "M" ±20%, "N" ±30%,
"C" ±0.25 pF, "D" ±0.5 pF, "Z" +80-20%.)

If there are no indications for the electrolytic capacitors, error is ±20%.

Resistors

VRD ..... Carbon-film type
VRS..... Carbon-film type
VRN ..... Metal-film type
VR • • MF ..... Cylindrical type (without lead wire)
VR • • MN..... Cylindrical type (without lead wire)
VR • • TV..... Square type (without lead wire)
VR • • TQ ..... Square type (without lead wire)
VR • • CY ..... Square type (without lead wire)
VR • • CZ ..... Square type (without lead wire)
VR • • • • • • • • • J .. The 13th character represents error.
("J" ±5%, "F" ±1%, "D" ±0.5%.)

If there are no indications for other parts, the resistors are ±5% carbon-film type.

NOTE:
Parts marked with "⚠" are important for maintaining the safety of the set.
Be sure to replace parts with specified ones for maintaining the safety and performance of the set.

MD-E9000H

NO.	PARTS CODE	★	PRICE RANK	DESCRIPTION

MD-E9000H

INTEGRATED CIRCUITS

IC1	VHILC78645NE1	J	AY	CD Servo,LC78645NE
IC2	VHILA6548D/-1	J	AN	Focus/Tracking/Spin/Sled Driver, LA6548D
IC3	VHITA7291S/-1	J	AH	Loading Motor Driver,TA7291S
IC4	VHI74VHC08F-1	J	AE	Inverter,74VHC08F
IC302	VHILC72131/-1	J	AP	PLL (Tuner),LC72131
IC303	VHILA1832S/-1	J	AN	FM IF Det./FM Mpx./AM IF, LA1832S
IC401	VHILC75341/-1	J	AM	Audio Processor,LC75341
IC701	RH-IX0395AWZZ	J	AY	System Microcomputer, IX0395AW
IC901	VHILA4628//-1	J	AU	Power Amp.,LA4628
IC1101	VHIIR3R58M/-1	J	AM	RF Signal Processor,IR3R58M
IC1201	VHILR37816A-1	J	BQ	Endec/Atrac,LR37816A
IC1202	RH-IX2474AFZZ	J	BF	4Mbit D-RAM,IX2474AF
IC1300	VHI74ACT02T-1	J	AE	Head Driver,74ACT02T
IC1301	VHIFTD2005/-1	J	AG	Head Driver,FTD2005
IC1302	VHICPH5608/-1	J	AH	Head Driver,CPH5608
IC1401	RH-IX0410AWZZ	J	AY	MD System Microcomputer, IX0410AW
IC1402	VHI58X2402T-1	J	AF	EEPROM,58X2402T
IC1601	VHIM56788FP-1	J	AX	Motor Driver,M56788FP
IC1701	VHIUDA1345/-1	J	AU	AD/DA Converter,UDA1345
IC1801	VHIXC62EP32-1	J	AE	Regulator,XC62EP32
IC1802	VHIXC62FP26P1	J	AG	Regulator,XC62FP26P
ICT21	VHILC72723/-1	J	AR	RDS Decorder,LC72723

TRANSISTORS

Q1	VSKTA1266GR-1	J	AB	Silicon,PNP,KTA1266 GR
Q2	VSKTA1271Y/-1	J	AC	Silicon,PNP,KTA1271 Y
Q3	VSKRC102M//-1	J	AC	Digital,NPN,KRC102 M
Q301	VS2SC380-O/-1	J	AC	Silicon,NPN,2SC380 O
Q360	VSKTA1266GR-1	J	AB	Silicon,PNP,KTA1266 GR
Q701,702	VSKRC102M//-1	J	AC	Digital,NPN,KRC102 M
Q781	VSKRC107M//-1	J	AC	Digital,NPN,KRC107 M
Q782,783	VSKRC111M//-1	J	AB	Digital,NPN,KRC111 M
Q801	VSKTA1266GR-1	J	AB	Silicon,PNP,KTA1266 GR
Q871	VSKTC3199GR-1	J	AB	Silicon,NPN,KTC3199 GR
Q901,902	VSKTC3199GR-1	J	AB	Silicon,NPN,KTC3199 GR
Q941	VSKTC2026//-1	J	AF	Silicon,NPN,KTC2026
Q942	VSKTC3199GR-1	J	AB	Silicon,NPN,KTC3199 GR
Q951	VHIKIA7810AP1	J	AF	Voltage Regulator,KIA7810AP
Q952	VSKTC3203Y/-1	J	AC	Silicon,NPN,KTC3203 Y
Q961	VHIKIA7805AP1	J	AF	Voltage Regulator,KIA7805AP
Q962	VHIAN78L05/-1	J	AE	Voltage Regulator,AN78L05
Q971	VSKTC3203Y/-1	J	AC	Silicon,NPN,KTC3203 Y
Q972	VSKTA1266GR-1	J	AB	Silicon,PNP,KTA1266 GR
Q1501	VSUN2214///-1	J	AB	Digital,NPN,UN2214
Q1804	VS2SB1205++-1	J	AF	Silicon,PNP,2SB1205
Q1807	VS2SD601AR/-1	J	AC	Silicon,NPN,2SD601 AR
QT21	VSKTC3199GR-1	J	AB	Silicon,NPN,KTC3199 GR

DIODES

D301~304	VHDDS1SS133-1	J	AB	Silicon,DS1SS133
D307,308	VHDDS1SS133-1	J	AB	Silicon,DS1SS133
D441,442	VHDDS1SS133-1	J	AB	Silicon,DS1SS133
D701	VHDDS1SS133-1	J	AB	Silicon,DS1SS133
D781~785	VHDDS1SS133-1	J	AB	Silicon,DS1SS133
D801	VHDTS6B04GM-1	J	AP	Silicon,TS6B04GM
D802~805	VHDRL203F//-1	J	AE	Silicon,RL203F
D806~808	VHDDS1N404S-1	J	AB	Silicon,DS1N404S
D809	VHDDS1SS133-1	J	AB	Silicon,DS1SS133
D871,872	VHDDS1SS133-1	J	AB	Silicon,DS1SS133
D873~876	VHDDS1N404S-1	J	AB	Silicon,DS1N404S
D877	VHDDS1SS133-1	J	AB	Silicon,DS1SS133
D961,962	VHDDS1SS133-1	J	AB	Silicon,DS1SS133
D972,973	VHDDS1SS133-1	J	AB	Silicon,DS1SS133
D1300	VHDSBE803//-1	J	AD	Silicon,SBE803
LED701	VHP4204SRT7-1	J	AD	LED,Red,4204SRT7
LED702	VHPLNG901CF-1	J	AS	LED,Blue,LNG901CF
ZD351	VHEDZ5R1BSB-1	J	AC	Zener,5.1V,DZ5.1BSB
ZD801	VHEDZ300BSC-1	J	AB	Zener,30V,DZ30BSC
ZD802	VHEDZ6R2BSA-1	J	AB	Zener,6.2V,DZ6.2BSA
ZD803	VHEDZ120BSB-1	J	AB	Zener,12V,DZ12BSB
ZD871	VHEDZ3R0BSA-1	J	AB	Zener,3V,DZ3BSA
ZD941	VHEDZ6R8BSA-1	J	AC	Zener,6.8V,DZ6.8BSA
ZD951	VHEDZ3R6BSB-1	J	AB	Zener,3.6V,DZ3.6BSB
ZDT21	VHEDZ5R1BSB-1	J	AC	Zener,5.1V,DZ5.1BSB

FILTERS

CF301,302	RFILF0072AFZZ	J	AG	FM IF
CF351	RFILF0003AWZZ	J	AK	FM IF
CF352	RFILA0009AWZZ	J	AE	AM IF
FL1501	RFILN0002AWZZ	J	AD	EMI Filter
FL1507	RFILN0003AWZZ	J	AD	EMI Filter
FL1509	RFILN0003AWZZ	J	AD	EMI Filter
FL1512	RFILN0003AWZZ	J	AD	EMI Filter
FL1518	RFILN0003AWZZ	J	AD	EMI Filter
FL1520	RFILN0003AWZZ	J	AD	EMI Filter
FL1523~1525	RFILN0007AWZZ	J	AD	EMI Filter

TRANSFORMERS

⚠	PT801	RTRNP0353AWZZ	J	BA	Power,Main
⚠	PT871	RTRNP0313AWZZ	J	AN	Power,Sub
	T303	RCILA0052AWZZ	J	AE	AM Tracking
	T306	RCILB0058AWZZ	J	AC	AM OSC.
	T351	RCILI0019AWZZ	J	AD	AM IF

COILS

L2	VP-XHR82K0000	J	AC	0.82 µH,Choke
L4	VP-XH2R2K0000	J	AB	2.2 µH,Choke
L341	RBLN-0002AWZZ	J	AE	Balun
L342	VP-DH2R2K0000	J	AB	2.2 µH,Peaking
L351,352	VP-DH101K0000	J	AB	100 µH,Choke
L354	RFILL0001AWZZ	J	AE	Low Pass Filter
L451	VPADK100KR15K	J	AE	10 µH
L452	VP-DHR22K0000	J	AB	0.22 µH
L781	VP-DH101K0000	J	AB	100 µH,Choke
L871	RCILZ0022AWZZ	J	AG	AC Line Filter
L901~904	RCILZ0137AFZZ	J	AA	0.29 µH
L981	VP-DH2R2K0000	J	AB	2.2 µH,Peaking
L1100	VPBNNR47K0000	J	AC	0.47 µH
L1101	VPBNN100K0000	J	AC	10 µH
L1200	VPBNN4R7K0000	J	AC	4.7 µH
L1201,1202	VPBNNR47K0000	J	AC	0.47 µH
L1300	RCILC0358AFZZ	J	AC	47 µH,Choke
LT21,22	VP-XH2R2K0000	J	AB	2.2 µH,Choke

VARIABLE CAPACITOR

VD301	VHCSVC348S/-1	J	AK	Variable Capacitance,SVC348S

VIBRATORS

X351	92LCRSTL1425A	J	AF	Crystal,456 kHz
X352	RCRSP0019AWZZ	J	AF	Crystal,4.5 MHz
XL1	RCRSP0025AWZZ	J	AK	Crystal,33.8688 MHz
XL701	RCRSP0009AWZZ	J	AK	Crystal,8.3886 MHz
XL1201	RCRSC0001AWZZ	J	AL	Crystal,33.8688 MHz
XT21	RCRSP0018AWZZ	J	AG	Crystal,4.332 MHz

THERMISTOR

⚠	RP941	RH-QX0010AWZZ	J	AE	Posistor,0.5ohms

CAPACITORS

C1	VCTYMN1CY103N	J	AA	0.01 µF,16V
C2	VCEAZA1CW476M	J	AB	47 µF,16V,Electrolytic
C3	VCTYMN1CY103N	J	AA	0.01 µF,16V
C4	VCEAZA1CW476M	J	AB	47 µF,16V,Electrolytic
C5	VCKYMN1HB102K	J	AA	0.001 µF,50V
C6	VCTYPA1CX473K	J	AA	0.047 µF,16V
C7	VCTYPA1CX104K	J	AB	0.1 µF,16V
C8	VCCSPA1HL100J	J	AA	10 pF,50V
C9	VCTYMN1CX272K	J	AA	0.0027 µF,16V
C10	VCEAZA1CW107M	J	AC	100 µF,16V,Electrolytic
C12	VCEAZA1CW106M	J	AC	10 µF,16V,Electrolytic
C13	VCEAZA1HW224M	J	AB	0.22 µF,50V,Electrolytic
C14	VCKYMN1HB101K	J	AA	100 pF,50V
C15	VCTYPA1CX104K	J	AB	0.1 µF,16V
C16	VCEAZA1HW225M	J	AB	2.2 µF,50V,Electrolytic
C17	VCTYPA1CX473K	J	AA	0.047 µF,16V
C18	VCKYMN1HB101K	J	AA	100 pF,50V

NO.	PARTS CODE	★	PRICE RANK	DESCRIPTION
C19	VCTYMN1EF223Z	J	AA	0.022 µF,25V
C20~23	VCKYMN1HB101K	J	AA	100 pF,50V
C24	VCKYPA1HF223Z	J	AB	0.022 µF,50V
C28	VCTYPA1CX473K	J	AA	0.047 µF,16V
C31,32	VCCCMN1HH150J	J	AA	15 pF (CH),50V
C41	RC-EZY107AF1C	J	AB	100 µF,16V,Electrolytic
C42	VCTYMN1EF223Z	J	AA	0.022 µF,25V
C43	VCEAZA1CW107M	J	AC	100 µF,16V,Electrolytic
C44	VCTYMN1CX152K	J	AA	0.0015 µF,16V
C45	VCEAZA1AW337M	J	AC	330 µF,10V,Electrolytic
C46~48	VCTYPA1CX104K	J	AB	0.1 µF,16V
C49	RC-EZY476AF1C	J	AB	47 µF,16V,Electrolytic
C50	VCTYPA1CX104K	J	AB	0.1 µF,16V
C53	VCEAZA1EW475M	J	AC	4.7 µF,25V,Electrolytic
C54	VCCSMN1HL220J	J	AA	22 pF,50V
C57,58	VCKYMN1HB681K	J	AA	680 pF,50V
C61	VCKYPA1HF103Z	J	AB	0.01 µF,50V
C62,63	VCKYPA1HB102K	J	AA	0.001 µF,50V
C301	VCTYMN1CY103N	J	AA	0.01 µF,16V
C321	VCEAZA1CW107M	J	AC	100 µF,16V,Electrolytic
C323	VCTYMN1EF223Z	J	AA	0.022 µF,25V
C325	VCKYMN1HB221K	J	AA	220 pF,50V
C330	VCCUMN1HJ150J	J	AA	15 pF (UJ),50V
C331	VCKYPA1HF473Z	J	AB	0.047 µF,50V
C332	VCTYMN1EF223Z	J	AA	0.022 µF,25V
C334	VCCUMN1HJ180J	J	AA	18 pF (UJ),50V
C335	VCKYMN1HB471K	J	AA	470 pF,50V
C338	VCKYMN1HB102K	J	AA	0.001 µF,50V
C341,342	VCTYMN1EF223Z	J	AA	0.022 µF,25V
C345~347	VCTYMN1EF223Z	J	AA	0.022 µF,25V
C350	VCTYBT1EF223Z	J	AA	0.022 µF,25V
C352	VCEAZA1HW106M	J	AB	10 µF,50V,Electrolytic
C353,354	VCTYMN1EF223Z	J	AA	0.022 µF,25V
C355	VCCSMN1HL220J	J	AA	22 pF,50V
C356	VCKYMN1HB102K	J	AA	0.001 µF,50V
C357	VCEAZA1HW225M	J	AB	2.2 µF,50V,Electrolytic
C358	VCEAZA1HW105M	J	AB	1 µF,50V,Electrolytic
C361	VCTYMN1EF223Z	J	AA	0.022 µF,25V
C362	VCEAZA1HW335M	J	AB	3.3 µF,50V,Electrolytic
C363	VCTYMN1EF223Z	J	AA	0.022 µF,25V
C364	VCEAZA1HW225M	J	AB	2.2 µF,50V,Electrolytic
C365	VCKYPA1HF223Z	J	AB	0.022 µF,50V
C366	VCKYMN1HB102K	J	AA	0.001 µF,50V
C367,368	VCEAZA1HW105M	J	AB	1 µF,50V,Electrolytic
C369	VCCUMN1HJ270J	J	AA	27 pF (UJ),50V
C370~372	VCEAZA1HW105M	J	AB	1 µF,50V,Electrolytic
C373,374	VCTYPA1CX183K	J	AA	0.018 µF,16V
C380	VCEAZA1HW106M	J	AB	10 µF,50V,Electrolytic
C381	VCCCMN1HH120J	J	AA	12 pF (CH),50V
C382	VCCCMN1HH150J	J	AA	15 pF (CH),50V
C384	VCKYMN1HB102K	J	AA	0.001 µF,50V
C385	VCTYMN1CY103N	J	AA	0.01 µF,16V
C386	VCKYMN1HB331K	J	AA	330 pF,50V
C387	VCTYMN1EF223Z	J	AA	0.022 µF,25V
C388	VCKYMN1HB102K	J	AA	0.001 µF,50V
C391	RC-EZY476AF1C	J	AB	47 µF,16V,Electrolytic
C392	VCKYMN1HB102K	J	AA	0.001 µF,50V
C393	VCEAZA1HW105M	J	AB	1 µF,50V,Electrolytic
C394	RC-EZY476AF1C	J	AB	47 µF,16V,Electrolytic
C395	VCTYMN1EF223Z	J	AA	0.022 µF,25V
C396	RC-EZY107AF1C	J	AB	100 µF,16V,Electrolytic
C397	VCTYMN1EF223Z	J	AA	0.022 µF,25V
C398	VCEAZA1CW107M	J	AC	100 µF,16V,Electrolytic
C399	VCKYPA1HF473Z	J	AB	0.047 µF,50V
C402	VCKYPA1HF223Z	J	AB	0.022 µF,50V
C403	RC-EZY107AF1C	J	AB	100 µF,16V,Electrolytic
C404~406	VCKYPA1HB561K	J	AA	560 pF,50V
C407	RC-EZY226AF1C	J	AB	22 µF,16V,Electrolytic
C411,412	RC-EZY105AF1H	J	AB	1 µF,50V,Electrolytic
C413,414	VCFYHA1HA104J	J	AB	0.1 µF,50V,Thin Film
C415,416	VCFYHA1HA124J	J	AB	0.12 µF,50V,Thin Film
C417,418	VCQYKA1HM152K	J	AB	0.0015 µF,50V,Mylar
C419~424	RC-EZY105AF1H	J	AB	1 µF,50V,Electrolytic
C425,426	RC-EZY106AF1C	J	AB	10 µF,16V,Electrolytic
C427	VCKYPA1HF223Z	J	AB	0.022 µF,50V
C428,429	RC-EZY105AF1H	J	AB	1 µF,50V,Electrolytic
C441,442	VCKYPA1HB391K	J	AA	390 pF,50V
C443	VCKYPA1HB102K	J	AA	0.001 µF,50V
C451,452	RC-EZY106AF1C	J	AB	10 µF,16V,Electrolytic
C453,454	VCKYPA1HB221K	J	AA	220 pF,50V
C455	VCKYPA1HF223Z	J	AB	0.022 µF,50V
C456,457	VCKYPA1HB101K	J	AA	100 pF,50V
C458	VCCSPA1HL100J	J	AA	10 pF,50V
C459	VCKYPA1HF103Z	J	AB	0.01 µF,50V
C460	VCKYPA1HB221K	J	AA	220 pF,50V
C461,462	VCKYPA1HB101K	J	AA	100 pF,50V
C463	VCKYPA1HF223Z	J	AB	0.022 µF,50V
C464	VCEAZA1AW227M	J	AC	220 µF,10V,Electrolytic
C465	VCKYPA1HF223Z	J	AB	0.022 µF,50V
C466~469	VCKYPA1HB221K	J	AA	220 pF,50V
C470	VCCSPA1HL330J	J	AA	33 pF,50V
C471	VCKYPA1HF103Z	J	AB	0.01 µF,50V
C701~703	RC-EZY105AF1H	J	AB	1 µF,50V,Electrolytic
C704,705	VCTYMN1EF223Z	J	AA	0.022 µF,25V
C706	RC-EZY227AF0J	J	AB	220 µF,6.3V,Electrolytic
C707	VCTYMN1EF223Z	J	AA	0.022 µF,25V
C708	RC-EZY106AF1E	J	AB	10 µF,25V,Electrolytic
C709	VCKYMN1HB101K	J	AA	100 pF,50V
C710,711	VCCCMN1HH180J	J	AA	18 pF (CH),50V
C712~715	VCKYMN1HB151K	J	AA	150 pF,50V
C716~718	VCKYPA1HB102K	J	AA	0.001 µF,50V
C781	VCEAZA1EW476M	J	AB	47 µF,25V,Electrolytic
C782	VCTYMN1EF223Z	J	AA	0.022 µF,25V
C783	RC-EZY106AF1E	J	AB	10 µF,25V,Electrolytic
C784	VCTYMN1EF223Z	J	AA	0.022 µF,25V
C801~804	VCQYKA1HM473K	J	AB	0.047 µF,50V,Mylar
C805,806	VCEAZA1HW227M	J	AC	220 µF,50V,Electrolytic
C807~809	VCEAZA1HW476M	J	AB	47 µF,50V,Electrolytic
C810	VCEAZA1VW107M	J	AC	100 µF,35V,Electrolytic
C811	VCTYPA1EX222K	J	AA	0.0022 µF,25V
C812	VCKYPA1HF473Z	J	AB	0.047 µF,50V
⚠ C871	RC-KZ002LAWZZ	J	AC	0.0047 µF,250V,Ceramic
C872	VCQYKA1HM473K	J	AB	0.047 µF,50V,Mylar
C873	VCEAZV1CW108M	J	AD	1000 µF,16V,Electrolytic
C874	VCEAZA0JW108M	J	AC	1000 µF,6.3V,Electrolytic
C875	VCKYPA1HF223Z	J	AB	0.022 µF,50V
C901,902	VCKYMN1HB102K	J	AA	0.001 µF,50V
C903,904	VCEAZA1HW225M	J	AB	2.2 µF,50V,Electrolytic
C905	VCEAZA1HW476M	J	AB	47 µF,50V,Electrolytic
C907~910	VCQYKA1HM104K	J	AB	0.1 µF,50V,Mylar
C911	VCEAZA1CW107M	J	AC	100 µF,16V,Electrolytic
C912	VCEAZA1VW107M	J	AC	100 µF,35V,Electrolytic
C913	VCEAZA1HW474M	J	AB	0.47 µF,50V,Electrolytic
C914	VCEAZA1EW107M	J	AB	100 µF,25V,Electrolytic
C917~922	VCKYPA1HF223Z	J	AB	0.022 µF,50V
C923~926	VCQYKA1HM104K	J	AB	0.1 µF,50V,Mylar
C927~934	VCKYPA1HF223Z	J	AB	0.022 µF,50V
C936~938	VCKYPA1HF223Z	J	AB	0.022 µF,50V
C939,940	VCKYPA1HB471K	J	AA	470 pF,50V
C941	VCKYPA1HF223Z	J	AB	0.022 µF,50V
C942	VCEAZA1CW107M	J	AC	100 µF,16V,Electrolytic
C943	VCEAZA1AW477M	J	AC	470 µF,10V,Electrolytic
C947	VCEAZW1EW688M	J	AL	6800 µF,25V,Electrolytic
C948	VCEAZW1EW338M	J	AG	3300 µF,25V,Electrolytic
C949	VCEAZW1CW688M	J	AH	6800 µF,16V,Electrolytic
C951,952	VCQYKA1HM104K	J	AB	0.1 µF,50V,Mylar
C953	VCEAZA1EW476M	J	AB	47 µF,25V,Electrolytic
C954	VCKYPA1HF223Z	J	AB	0.022 µF,50V
C955	VCEAZA1AW107M	J	AB	100 µF,10V,Electrolytic
C956	VCKYPA1HF223Z	J	AB	0.022 µF,50V
C961,962	VCQYKA1HM104K	J	AB	0.1 µF,50V,Mylar
C963	VCEAZA1EW476M	J	AB	47 µF,25V,Electrolytic
C964,965	VCQYKA1HM104K	J	AB	0.1 µF,50V,Mylar
C966	VCEAZA1EW476M	J	AB	47 µF,25V,Electrolytic
C971	VCEAZA1HW475M	J	AB	4.7 µF,50V,Electrolytic
C972	VCEAZA1EW476M	J	AB	47 µF,25V,Electrolytic
C973	RC-EZY476AF1E	J	AB	47 µF,25V,Electrolytic
C981,982	VCEAZA1HW475M	J	AB	4.7 µF,50V,Electrolytic
C983,984	VCCSPA1HL221J	J	AA	220 pF,50V
C985	VCEAZA1CW226M	J	AC	22 µF,16V,Electrolytic
C986,987	VCKYPA1HB102K	J	AA	0.001 µF,50V
C990	VCKYPA1HF103Z	J	AB	0.01 µF,50V
C1100	RC-KZ0003AWZZ	J	AE	4.7 µF,10V
C1107	VCKYCY1CB223K	J	AA	0.022 µF,16V
C1110,1111	VCKYCY1AF105Z	J	AB	1 µF,10V
C1112	VCCCCY1HH5R0C	J	AA	5 pF (CH),50V
C1113	VCKYCY0JB105K	J	AC	1 µF,6.3V
C1114,1115	VCKYCY1CB104K	J	AB	0.1 µF,16V
C1116,1117	VCKYCY1AF105Z	J	AB	1 µF,10V
C1118,1119	VCKYCY1AB474K	J	AC	0.47 µF,10V
C1121	VCKYCY1AB224K	J	AB	0.22 µF,10V
C1122	VCKYCY1AF105Z	J	AB	1 µF,10V
C1123,1124	VCKYCY1CB104K	J	AB	0.1 µF,16V
C1125	VCKYCY1AF105Z	J	AB	1 µF,10V

NO.	PARTS CODE	★	PRICE RANK	DESCRIPTION
C1161	VCKYCY1HB102K	J	AA	0.001 µF,50V
C1200	VCKYCY1AF105Z	J	AB	1 µF,10V
C1201	RC-KZ0002AWZZ	J	AE	10 µF,10V
C1202	VCKYCY1AF105Z	J	AB	1 µF,10V
C1205	VCKYCY1AF105Z	J	AB	1 µF,10V
C1206	VCKYCY1CB103K	J	AA	0.01 µF,16V
C1207	VCKYCY1AF105Z	J	AB	1 µF,10V
C1208,1209	VCCCCY1HH120J	J	AA	12 pF (CH),50V
C1211	VCKYCY1EF104Z	J	AA	0.1 µF,25V
C1230	VCKYCY1AF105Z	J	AB	1 µF,10V
C1260	VCKYCY1EF104Z	J	AA	0.1 µF,25V
C1261~1265	VCCCCY1HH221J	J	AA	220 pF (CH),50V
C1266	VCCCCY1HH220J	J	AA	22 pF (CH),50V
C1300	VCCCCY1HH151J	J	AA	150 pF (CH),50V
C1301	VCKYCY1CB223K	J	AA	0.022 µF,16V
C1302	RC-KZ0002AWZZ	J	AE	10 µF,10V
C1303	VCKYCY1AF105Z	J	AB	1 µF,10V
C1304	VCCCCY1HH221J	J	AA	220 pF (CH),50V
C1305	VCCCCY1HH680J	J	AA	68 pF (CH),50V
C1340	VCCCCY1HH101J	J	AA	100 pF (CH),50V
C1403	VCKYCY1EF104Z	J	AA	0.1 µF,25V
C1404	VCKYCY1CB103K	J	AA	0.01 µF,16V
C1405	VCCCCY1HH681J	J	AC	680 pF (CH),50V
C1407	VCKYCY1EF104Z	J	AA	0.1 µF,25V
C1409	VCKYCY1AF105Z	J	AB	1 µF,10V
C1510	VCCCCY1HH101J	J	AA	100 pF (CH),50V
C1512	VCCCCY1HH101J	J	AA	100 pF (CH),50V
C1523,1524	VCCCCY1HH101J	J	AA	100 pF (CH),50V
C1530	VCCCCY1HH101J	J	AA	100 pF (CH),50V
C1534	VCCCCY1HH470J	J	AA	47 pF (CH),50V
C1536	VCCCCY1HH470J	J	AA	47 pF (CH),50V
C1538	VCCCCY1HH101J	J	AA	100 pF (CH),50V
C1540	VCCCCY1HH151J	J	AA	150 pF (CH),50V
C1563	VCKYCY1AF105Z	J	AB	1 µF,10V
C1602	VCCCCY1HH471J	J	AA	470 pF (CH),50V
C1603	VCCCCY1HH681J	J	AC	680 pF (CH),50V
C1606	RC-KZ0002AWZZ	J	AE	10 µF,10V
C1607	VCKYCY1AF105Z	J	AB	1 µF,10V
C1610	RC-KZ0003AWZZ	J	AE	4.7 µF,10V
C1611	VCKYCY1HB472K	J	AA	0.0047 µF,50V
C1613	VCKYCY1CB103K	J	AA	0.01 µF,16V
C1616	VCEAPS107AF1A	J	AD	100 µF,10V,Electrolytic
C1619	VCCCCY1HH331J	J	AA	330 pF (CH),50V
C1655	VCKYCY1HF103Z	J	AB	0.01 µF,50V
C1700	VCEAPS476AF0G	J	AC	47 µF,4V,Electrolytic
C1703	VCKYCY1EF104Z	J	AA	0.1 µF,25V
C1704	VCEAPS476AF0G	J	AC	47 µF,4V,Electrolytic
C1706	VCKYCY1HF103Z	J	AB	0.01 µF,50V
C1708	VCKYCY1HF103Z	J	AB	0.01 µF,50V
C1715	VCKYCY1EF104Z	J	AA	0.1 µF,25V
C1716	VCEAPS476AF0G	J	AC	47 µF,4V,Electrolytic
C1720,1721	VCCCCY1HH331J	J	AA	330 pF (CH),50V
C1750	VCKYCY1EF104Z	J	AA	0.1 µF,25V
C1801,1802	RC-KZ0002AWZZ	J	AE	10 µF,10V
C1806	VCKYCY1AF105Z	J	AB	1 µF,10V
CT21	VCEAZA1CW476M	J	AB	47 µF,16V,Electrolytic
CT22	VCTYMN1EF223Z	J	AA	0.022 µF,25V
CT23,24	VCCCMN1HH220J	J	AA	22 pF (CH),50V
CT25,26	VCTYMN1EF223Z	J	AA	0.022 µF,25V
CT27	VCKYMN1HB561K	J	AA	560 pF,50V
CT28	VCTYMN1EF223Z	J	AA	0.022 µF,25V
CT29	VCEAZA1CW476M	J	AB	47 µF,16V,Electrolytic
CT30	VCTYMN1EF223Z	J	AA	0.022 µF,25V
CT31,32	VCEAZA1HW106M	J	AB	10 µF,50V,Electrolytic

RESISTORS

	VRD-MN2BD000C	J	AA	0 ohm,Jumper,ø1.4×3.5mm,Ivory
	VRS-CY1JB000J	J	AA	0 ohm,Jumper,0.8×1.55mm,Green
R1	VRD-ST2CD822J	J	AA	8.2 kohms,1/6W
R2	VRD-ST2CD223J	J	AA	22 kohms,1/6W
R3,4	VRD-ST2CD822J	J	AA	8.2 kohms,1/6W
R6	VRD-ST2CD822J	J	AA	8.2 kohms,1/6W
R7	VRD-ST2CD223J	J	AA	22 kohms,1/6W
R8	VRD-ST2CD470J	J	AA	47 ohms,1/6W
R9	VRD-MN2BD3R3J	J	AA	3.3 ohms,1/8W
R10	VRD-MN2BD273J	J	AA	27 kohms,1/8W
R11	VRD-MN2BD103J	J	AA	10 kohm,1/8W
R12	VRD-MN2BD331J	J	AA	330 ohms,1/8W
R13	VRD-MN2BD153J	J	AA	15 kohms,1/8W
R14	VRD-MN2BD122J	J	AA	1.2 kohms,1/8W
R15	VRD-MN2BD123J	J	AA	12 kohms,1/8W

NO.	PARTS CODE	★	PRICE RANK	DESCRIPTION
R16,17	VRD-MN2BD681J	J	AA	680 ohms,1/8W
R18	VRD-MN2BD682J	J	AA	6.8 kohms,1/8W
R19	VRD-MN2BD153J	J	AA	15 kohms,1/8W
R20	VRD-MN2BD822J	J	AA	8.2 kohms,1/8W
R21	VRD-ST2CD822J	J	AA	8.2 kohms,1/6W
R23	VRD-MN2BD102J	J	AA	1 kohm,1/8W
R24	VRD-MN2BD473J	J	AA	47 kohms,1/8W
R27~33	VRD-ST2CD102J	J	AA	1 kohm,1/6W
R35,36	VRD-MN2BD102J	J	AA	1 kohm,1/8W
R37~39	VRD-ST2CD101J	J	AA	100 ohm,1/6W
R40	VRD-ST2CD103J	J	AA	10 kohm,1/6W
R42	VRD-ST2CD221J	J	AA	220 ohms,1/6W
R48	VRD-RT2HD2R2J	J	AA	2.2 ohms,1/2W
R49	VRD-MN2BD562J	J	AA	5.6 kohms,1/8W
R50	VRD-MN2BD153J	J	AA	15 kohms,1/8W
R53	VRD-MN2BD221J	J	AA	220 ohms,1/8W
R54	VRD-ST2CD102J	J	AA	1 kohm,1/6W
R55	VRD-MN2BD104J	J	AA	100 kohm,1/8W
R56	VRD-MN2BD183J	J	AA	18 kohms,1/8W
R323	VRD-MN2BD683J	J	AA	68 kohms,1/8W
R336	VRD-MN2BD103J	J	AA	10 kohm,1/8W
R344	VRD-MN2BD471J	J	AA	470 ohms,1/8W
R345	VRD-MN2BD472J	J	AA	4.7 kohms,1/8W
R346	VRD-MN2BD331J	J	AA	330 ohms,1/8W
R347	VRD-MN2BD682J	J	AA	6.8 kohms,1/8W
R348	VRD-MN2BD681J	J	AA	680 ohms,1/8W
R349	VRD-MN2BD330J	J	AA	33 ohms,1/8W
R350	VRD-MN2BD272J	J	AA	2.7 kohms,1/8W
R351	VRD-MN2BD562J	J	AA	5.6 kohms,1/8W
R352	VRD-MN2BD102J	J	AA	1 kohm,1/8W
R353	VRD-MN2BD271J	J	AA	270 ohms,1/8W
R355	VRD-MN2BD332J	J	AA	3.3 kohms,1/8W
R356	VRD-MN2BD102J	J	AA	1 kohm,1/8W
R357	VRD-ST2CD474J	J	AA	470 kohms,1/6W
R358	VRD-ST2CD392J	J	AA	3.9 kohms,1/6W
R359	VRD-ST2CD182J	J	AA	1.8 kohms,1/6W
R360	VRD-ST2CD472J	J	AA	4.7 kohms,1/6W
R365	VRD-MN2BD103J	J	AA	10 kohm,1/8W
R368	VRD-ST2CD223J	J	AA	22 kohms,1/6W
R369	VRD-MN2BD150J	J	AA	15 ohms,1/8W
R370	VRD-ST2CD102J	J	AA	1 kohm,1/6W
R372~374	VRD-MN2BD102J	J	AA	1 kohm,1/8W
R376	VRD-MN2BD102J	J	AA	1 kohm,1/8W
R377	VRD-MN2BD473J	J	AA	47 kohms,1/8W
R378	VRD-MN2BD102J	J	AA	1 kohm,1/8W
R379	VRD-MN2BD222J	J	AA	2.2 kohms,1/8W
R380	VRD-MN2BD152J	J	AA	1.5 kohms,1/8W
R381	VRD-MN2BD103J	J	AA	10 kohm,1/8W
R382	VRD-ST2EE151J	J	AA	150 ohms,1/4W
R383	VRD-MN2BD562J	J	AA	5.6 kohms,1/8W
R384	VRD-ST2CD562J	J	AA	5.6 kohms,1/6W
R385	VRD-MN2BD562J	J	AA	5.6 kohms,1/8W
R387	VRD-ST2CD562J	J	AA	5.6 kohms,1/6W
R388	VRD-MN2BD392J	J	AA	3.9 kohms,1/8W
R391,392	VRD-ST2EE271J	J	AA	270 ohms,1/4W
R393	VRD-MN2BD102J	J	AA	1 kohm,1/8W
R395	VRD-MN2BD473J	J	AA	47 kohms,1/8W
R401~403	VRD-ST2CD102J	J	AA	1 kohm,1/6W
R413,414	VRD-ST2CD392J	J	AA	3.9 kohms,1/6W
R415,416	VRD-ST2CD332J	J	AA	3.3 kohms,1/6W
R417,418	VRD-ST2CD101J	J	AA	100 ohm,1/6W
R441,442	VRD-ST2CD822J	J	AA	8.2 kohms,1/6W
R443,444	VRD-ST2CD273J	J	AA	27 kohms,1/6W
R446,447	VRD-ST2CD103J	J	AA	10 kohm,1/6W
R448,449	VRD-ST2CD822J	J	AA	8.2 kohms,1/6W
R451	VRD-ST2CD101J	J	AA	100 ohm,1/6W
R452,453	VRD-ST2CD103J	J	AA	10 kohm,1/6W
R454,455	VRD-ST2CD101J	J	AA	100 ohm,1/6W
R456,457	VRD-ST2CD103J	J	AA	10 kohm,1/6W
R458,459	VRD-ST2CD123J	J	AA	12 kohms,1/6W
R460	VRD-ST2CD274J	J	AA	270 kohms,1/6W
R461~463	VRD-ST2CD560J	J	AA	56 ohms,1/6W
R701	VRD-MN2BD681J	J	AA	680 ohms,1/8W
R702	VRD-MN2BD182J	J	AA	1.8 kohms,1/8W
R703	VRD-MN2BD272J	J	AA	2.7 kohms,1/8W
R704	VRD-MN2BD472J	J	AA	4.7 kohms,1/8W
R705	VRD-MN2BD822J	J	AA	8.2 kohms,1/8W
R706	VRD-MN2BD183J	J	AA	18 kohms,1/8W
R707	VRD-MN2BD104J	J	AA	100 kohm,1/8W
R709	VRD-MN2BD681J	J	AA	680 ohms,1/8W
R710	VRD-MN2BD182J	J	AA	1.8 kohms,1/8W
R711	VRD-MN2BD272J	J	AA	2.7 kohms,1/8W

NO.	PARTS CODE	★	PRICE RANK	DESCRIPTION
R712	VRD-MN2BD472J	J	AA	4.7 kohms,1/8W
R713	VRD-MN2BD822J	J	AA	8.2 kohms,1/8W
R714	VRD-MN2BD183J	J	AA	18 kohms,1/8W
R716	VRD-MN2BD681J	J	AA	680 ohms,1/8W
R717	VRD-MN2BD182J	J	AA	1.8 kohms,1/8W
R718	VRD-MN2BD272J	J	AA	2.7 kohms,1/8W
R719	VRD-MN2BD472J	J	AA	4.7 kohms,1/8W
R720	VRD-MN2BD822J	J	AA	8.2 kohms,1/8W
R721	VRD-MN2BD183J	J	AA	18 kohms,1/8W
R722	VRD-MN2BD104J	J	AA	100 kohm,1/8W
R723~730	VRD-MN2BD473J	J	AA	47 kohms,1/8W
R731~735	VRD-MN2BD102J	J	AA	1 kohm,1/8W
R736	VRD-ST2CD102J	J	AA	1 kohm,1/6W
R737~744	VRD-MN2BD102J	J	AA	1 kohm,1/8W
R745,746	VRD-MN2BD562J	J	AA	5.6 kohms,1/8W
R747	VRD-MN2BD102J	J	AA	1 kohm,1/8W
R748,749	VRD-ST2CD102J	J	AA	1 kohm,1/6W
R750,751	VRD-ST2CD562J	J	AA	5.6 kohms,1/6W
R752~754	VRD-ST2CD102J	J	AA	1 kohm,1/6W
R755~758	VRD-MN2BD102J	J	AA	1 kohm,1/8W
R759	VRD-ST2CD102J	J	AA	1 kohm,1/6W
R761,762	VRD-ST2CD102J	J	AA	1 kohm,1/6W
R764	VRD-ST2CD102J	J	AA	1 kohm,1/6W
R765~769	VRD-MN2BD102J	J	AA	1 kohm,1/8W
R773	VRD-MN2BD222J	J	AA	2.2 kohms,1/8W
R775	VRD-ST2CD824J	J	AA	820 kohms,1/6W
R776,777	VRD-ST2CD473J	J	AA	47 kohms,1/6W
R778	VRD-MN2BD560J	J	AA	56 ohms,1/8W
R781	VRD-MN2BD223J	J	AA	22 kohms,1/8W
R782	VRD-MN2BD101J	J	AA	100 ohm,1/8W
R783	VRD-MN2BD104J	J	AA	100 kohm,1/8W
R784	VRD-ST2CD473J	J	AA	47 kohms,1/6W
R785	VRD-MN2BD474J	J	AA	470 kohms,1/8W
R786	VRD-ST2CD103J	J	AA	10 kohm,1/6W
R787	VRD-MN2BD474J	J	AA	470 kohms,1/8W
R788	VRD-MN2BD103J	J	AA	10 kohm,1/8W
R789~791	VRD-ST2CD103J	J	AA	10 kohm,1/6W
R792~799	VRD-MN2BD473J	J	AA	47 kohms,1/8W
R801	VRD-ST2CD102J	J	AA	1 kohm,1/6W
R802	VRD-ST2CD221J	J	AA	220 ohms,1/6W
R803	VRD-ST2CD123J	J	AA	12 kohms,1/6W
R804	VRD-ST2CD221J	J	AA	220 ohms,1/6W
R805	VRD-ST2CD224J	J	AA	220 kohms,1/6W
R806	VRD-ST2CD473J	J	AA	47 kohms,1/6W
R871	VRD-ST2CD221J	J	AA	220 ohms,1/6W
R872	VRD-ST2CD473J	J	AA	47 kohms,1/6W
R873	VRD-ST2CD102J	J	AA	1 kohm,1/6W
R901	VRD-MN2BD153J	J	AA	15 kohms,1/8W
R902	VRD-ST2CD153J	J	AA	15 kohms,1/6W
R903,904	VRD-MN2BD272J	J	AA	2.7 kohms,1/8W
R905,906	VRD-MN2BD222J	J	AA	2.2 kohms,1/8W
R907,908	VRD-MN2BD102J	J	AA	1 kohm,1/8W
R909	VRD-MN2BD223J	J	AA	22 kohms,1/8W
R910	VRD-MN2BD332J	J	AA	3.3 kohms,1/8W
R911~914	VRD-ST2CD102J	J	AA	1 kohm,1/6W
R915~922	VRD-ST2EE6R8J	J	AA	6.8 ohms,1/4W
R923,924	VRD-ST2EE4R7J	J	AA	4.7 ohms,1/4W
R928	VRD-RT2HD222J	J	AA	2.2 kohms,1/2W
R941	VRD-ST2CD102J	J	AA	1 kohm,1/6W
R942	VRD-ST2CD473J	J	AA	47 kohms,1/6W
R951	VRD-RT2HD3R3J	J	AA	3.3 ohms,1/2W
R952	VRD-ST2CD223J	J	AA	22 kohms,1/6W
R953	VRD-ST2CD122J	J	AA	1.2 kohms,1/6W
R954,955	VRD-ST2EE221J	J	AA	220 ohms,1/4W
R961,962	VRD-ST2CD103J	J	AA	10 kohm,1/6W
R972	VRD-ST2CD333J	J	AA	33 kohms,1/6W
R973	VRD-ST2CD332J	J	AA	3.3 kohms,1/6W
R974	VRD-ST2CD103J	J	AA	10 kohm,1/6W
R975	VRD-RT2HD2R2J	J	AA	2.2 ohms,1/2W
R977,978	VRD-ST2CD103J	J	AA	10 kohm,1/6W
R979	VRD-ST2CD331J	J	AA	330 ohms,1/6W
R981,982	VRD-ST2EE271J	J	AA	270 ohms,1/4W
R983	VRD-MN2BD103J	J	AA	10 kohm,1/8W
R984	VRD-RT2HD470J	J	AA	47 ohms,1/2W
R1100	VRS-TQ2BB270J	J	AA	27 ohms,1/8W
R1101	VRS-CY1JB1R0J	J	AA	1 ohm,1/16W
R1102	VRS-CY1JB103J	J	AA	10 kohm,1/16W
R1105	VRS-CY1JB122J	J	AA	1.2 kohms,1/16W
R1110	VRS-CY1JB684F	J	AA	680 kohms,1/16W
R1111,1112	VRS-CY1JB104F	J	AA	100 kohm,1/16W
R1113	VRS-CY1JB684F	J	AA	680 kohms,1/16W
R1114	VRS-CY1JB123J	J	AA	12 kohms,1/16W
R1115	VRS-CY1JB334F	J	AA	330 kohms,1/16W
R1116,1117	VRS-CY1JB473F	J	AA	47 kohms,1/16W
R1118	VRS-CY1JB334F	J	AA	330 kohms,1/16W
R1119	VRS-CY1JB224J	J	AA	220 kohms,1/16W
R1120	VRS-CY1JB564J	J	AA	560 kohms,1/16W
R1121	VRS-CY1JB104J	J	AA	100 kohm,1/16W
R1122,1123	VRS-CY1JB123J	J	AA	12 kohms,1/16W
R1124,1125	VRS-CY1JB222J	J	AA	2.2 kohms,1/16W
R1201	VRS-CY1JB563F	J	AA	56 kohms,1/16W
R1203	VRS-CY1JB104F	J	AA	100 kohm,1/16W
R1205	VRS-CY1JB683J	J	AA	68 kohms,1/16W
R1207	VRS-CY1JB393J	J	AA	39 kohms,1/16W
R1209	VRS-CY1JB101J	J	AA	100 ohm,1/16W
R1210,1211	VRS-CY1JB221J	J	AA	220 ohms,1/16W
R1214	VRS-CY1JB103J	J	AA	10 kohm,1/16W
R1215	VRS-CY1JB105J	J	AA	1 Mohm,1/16W
R1217	VRS-CY1JB151J	J	AA	150 ohms,1/16W
R1230,1231	VRS-CY1JB103F	J	AA	10 kohm,1/16W
R1261~1266	VRS-CY1JB273J	J	AA	27 kohms,1/16W
R1300	VRS-CY1JB6R8J	J	AA	6.8 ohms,1/16W
R1301	VRS-CY1JB100J	J	AA	10 ohm,1/16W
R1304	VRS-CY1JB151J	J	AA	150 ohms,1/16W
R1401	VRS-CY1JB272J	J	AA	2.7 kohms,1/16W
R1403	VRS-CY1JB271J	J	AA	270 ohms,1/16W
R1406	VRS-CY1JB103J	J	AA	10 kohm,1/16W
R1407,1408	VRS-CY1JB332J	J	AA	3.3 kohms,1/16W
R1414	VRS-CY1JB224J	J	AA	220 kohms,1/16W
R1415	VRS-CY1JB102J	J	AA	1 kohm,1/16W
R1417,1418	VRS-CY1JB102J	J	AA	1 kohm,1/16W
R1420	VRS-CY1JB102J	J	AA	1 kohm,1/16W
R1430	VRS-CY1JB103J	J	AA	10 kohm,1/16W
R1435	VRS-CY1JB103J	J	AA	10 kohm,1/16W
R1441	VRS-CY1JB473J	J	AA	47 kohms,1/16W
R1443	VRS-CY1JB102J	J	AA	1 kohm,1/16W
R1446	VRS-CY1JB103J	J	AA	10 kohm,1/16W
R1460	VRS-CY1JB103J	J	AA	10 kohm,1/16W
R1463	VRS-CY1JB103J	J	AA	10 kohm,1/16W
R1515,1516	VRS-CY1JB221J	J	AA	220 ohms,1/16W
R1517,1518	VRS-CY1JB470J	J	AA	47 ohms,1/16W
R1521	VRS-CY1JB102J	J	AA	1 kohm,1/16W
R1529	VRS-CY1JB221J	J	AA	220 ohms,1/16W
R1532	VRS-CY1JB273J	J	AA	27 kohms,1/16W
R1533~1538	VRS-CY1JB102J	J	AA	1 kohm,1/16W
R1601	VRS-CY1JB123F	J	AA	12 kohms,1/16W
R1605	VRS-CY1JB123F	J	AA	12 kohms,1/16W
R1612	VRS-CY1JB563J	J	AA	56 kohms,1/16W
R1614	VRS-CY1JB333J	J	AA	33 kohms,1/16W
R1616	VRS-CY1JB123J	J	AA	12 kohms,1/16W
R1618	VRS-CY1JB223J	J	AA	22 kohms,1/16W
R1621	VRS-CY1JB682J	J	AA	6.8 kohms,1/16W
R1622,1623	VRS-CY1JB223J	J	AA	22 kohms,1/16W
R1624	VRS-CY1JB682J	J	AA	6.8 kohms,1/16W
R1701	VRS-CY1JB473J	J	AA	47 kohms,1/16W
R1702	VRS-CY1JB333J	J	AA	33 kohms,1/16W
R1703~1705	VRS-CY1JB3R9J	J	AA	3.9 ohms,1/16W
R1716	VRS-CY1JB104J	J	AA	100 kohm,1/16W
R1802	VRS-CY1JB563J	J	AA	56 kohms,1/16W
R1803	VRS-CY1JB333J	J	AA	33 kohms,1/16W
R1804	VRS-CY1JB391J	J	AA	390 ohms,1/16W
R1806	VRS-TQ2BB1R0J	J	AA	1 ohm,1/8W
R1807	VRS-CY1JB273J	J	AA	27 kohms,1/16W
R1809	VRS-TQ2BB1R0J	J	AA	1 ohm,1/8W
R1811	VRS-TQ2BB1R0J	J	AA	1 ohm,1/8W
R1931	VRS-CY1JB102J	J	AA	1 kohm,1/16W
R1932	VRS-CY1JB471J	J	AA	470 ohms,1/16W
R1933	VRS-CY1JB561J	J	AA	560 ohms,1/16W
R1934	VRS-CY1JB181J	J	AA	180 ohms,1/16W
RT21	VRD-ST2CD103J	J	AA	10 kohm,1/6W
RT22~25	VRD-MN2BD102J	J	AA	1 kohm,1/8W
RT26	VRD-MN2BD563J	J	AA	56 kohms,1/8W
RT27	VRD-MN2BD103J	J	AA	10 kohm,1/8W
RT28	VRD-MN2BD563J	J	AA	56 kohms,1/8W
RT29,30	VRD-ST2EE391J	J	AA	390 ohms,1/4W
RT31	VRD-ST2CD103J	J	AA	10 kohm,1/6W
RT32	VRD-ST2CD682J	J	AA	6.8 kohms,1/6W

OTHER CIRCUITRY PARTS

BI1/CNS402	QCNWN1886AWZZ	J	AH	Connector Ass'y,6/7Pin
BI301/CNS301	QCNWN1893AWZZ	J	AK	Connector Ass'y,14/14Pin
BI441/CNS441	QCNWN1941AWZZ	J	AG	Connector Ass'y,3/3Pin
BI701/CNS701	QCNWN1884AWZZ	J	AF	Connector Ass'y,5/5Pin

MD-E9000H

NO.	PARTS CODE	★	PRICE RANK	DESCRIPTION
BI702/CNS702	QCNWN1885AWZZ	J	AG	Connector Ass'y,8/8Pin
BI704A/B/CNS704	QCNWN1888AWZZ	J	AG	Connector Ass'y,6/3/3Pin
BI901/CNS901	QCNWN1890AWZZ	J	AH	Connector Ass'y,7/7Pin
BI902/CNS902	QCNWN1891AWZZ	J	AH	Connector Ass'y,12/12Pin
BI903A/B/CNS903	QCNWN1892AWZZ	J	AK	Connector Ass'y,7/4/11Pin
CN1101	QCNCWXM28AFZZ	J	AG	Socket,28Pin
CN1300	QCNCM891BAFZZ	J	AC	Plug,2Pin
CN1401	QCNCWYR09AWZZ	J	AD	Socket,9Pin
CN1501	QCNCWYR27AWZZ	J	AE	Socket,27Pin
CNP1	QCNCM704GAWZZ	J	AC	Plug,7Pin
CNP2	QCNCM704HAWZZ	J	AC	Plug,8Pin
CNP3	92LCONE2P53253	J	AB	Plug,2Pin
CNP4	92LCONE6P53253	J	AC	Plug,6Pin
CNP4A	92LCONE6P53254	J	AC	Plug,6Pin
CNP5	92LCONE8P53253	J	AC	Plug,8Pin
CNP6	92LCONE2P53253	J	AB	Plug,2Pin
CNP301	92LCONE2P5268	J	AB	Plug,2Pin
CNP401	QCNCWZX08AWZZ	J	AC	Socket,8Pin
CNP402	QCNCM705GAFZZ	J	AB	Plug,7Pin
CNP403	92LCONECP53253	J	AD	Plug,12Pin
CNP404	92LCONE7P53253	J	AC	Plug,7Pin
CNP405	92LCONEEP53253	J	AE	Plug,14Pin
CNP406	QCNCWZP16AWZZ	J	AD	Socket,16Pin
CNP441	92LCONE3P53253	J	AB	Plug,3Pin
CNP451	QCNCWYP27AWZZ	J		Socket,27Pin
CNP702	QCNCWZO16AWZZ	J		Socket,16Pin
CNP703	QCNCWZY08AWZZ	J	AC	Socket,8Pin
CNP704	92LCONE3P53253	J	AB	Plug,3Pin
CNP871	92LCONE5P53254	J	AB	Plug,5Pin
CNP903	92LCONEBP5267X	J	AC	Plug,11Pin
CNP971	92LCONE2P53253	J	AB	Plug,2Pin
CNS1A/B	QCNWN1976AWZZ	J	AG	Connector Ass'y,7/7Pin
CNS2A/B	QCNWN1975AWZZ	J	AF	Connector Ass'y,8/8Pin
CNS3	QCNWN1895AWZZ	J	AC	Connector Ass'y,2Pin
CNS4A/B	QCNWN1894AWZZ	J	AF	Connector Ass'y,6/6Pin
CNS6	QCNWN2077AWZZ	J		Connector Ass'y,2Pin
CNS971	QCNWN1896AWZZ	J	AC	Connector Ass'y,2Pin
CORE1,2	RCORF0015AWZZ	J	AB	Core
CW1501	QCNWN1880AWZZ	J	AF	Flat Cable,27Pin
CW1931	QCNWN1742AWZZ	J	AE	Flat Cable,9Pin
⚠ F801	QFS-D632CAWNI	J	AC	Fuse,T6.3A L 250V
⚠ F802,803	QFS-D252CAWNI	J	AC	Fuse,T2.5A L 250V
FE301	RTUNS0012AWZZ	J	AV	FM Front End
FFC702	QCNWN1883AWZZ	J		Flat Cable,16Pin
FFC703	QCNWN1882AWZZ	J	AD	Flat Cable,8Pin
FL701	VVKST48GNK/-1	J	AZ	FL Display
JK441	QSOCJ0221AWZZ	J	AD	Jack,AUX Input
JK981	QJAKM0004AWZZ	J	AK	Jack,Headphones
LUG901	QLUGP0001AWZZ	J	AC	Lug
M1	92LMTR1854BASY	J	AP	Motor with Gear [Sled]
M2	92LMTR3515CASY	J	BA	Motor with Chassis [Spindle]
M901	RMOTV0038AWZZ	J	AT	MD Spindle Motor Ass'y
M902	92LMTR3167BASY	J	AP	MD Sled Motor Ass'y
M903	92LMTR3167AASY	J	AN	MD Loading Motor Ass'y
M904	RMOTV0027AWZZ	J	AM	CD Lid Motor
M905	RMOTV0027AWZZ	J	AM	Motor,Air Cooling Fan
⚠ RL800	RRLYD0011AWZZ	J	AE	Relay
RX781	VHLN64H380A-1	J	AK	Remote Sensor,N64H380A
SO301	QTANC0101AWZZ	J	AF	Terminal,FM Antenna
⚠ SO801	QSOCA0212AWZZ	J	AD	Socket,AC Input
SO901	QTANA0416AWZZ	J	AE	Terminal,Speaker
SW4	QSW-F9001AW01	J	AD	Switch,Push Type [Pickup In]
SW701	92LSWICH1401AT	J	AC	Switch,Key Type [Volume Down]
SW702	92LSWICH1401AT	J	AC	Switch,Key Type [Volume Up]
SW703	92LSWICH1401AT	J	AC	Switch,Key Type [CD Play/Pause]
SW704	92LSWICH1401AT	J	AC	Switch,Key Type [CD Stop]
SW705	92LSWICH1401AT	J	AC	Switch,Key Type [FF/Skip Up/Preset Up]
SW706	92LSWICH1401AT	J	AC	Switch,Key Type [REW/Skip Down/Preset Down]
SW707	92LSWICH1401AT	J	AC	Switch,Key Type [MD Stop]
SW708	92LSWICH1401AT	J	AC	Switch,Key Type [MD Play/Pause]
SW709	92LSWICH1401AT	J	AC	Switch,Key Type [Memory/Enter]
SW710	92LSWICH1401AT	J	AC	Switch,Key Type [Display (Demo)]
SW711	92LSWICH1401AT	J	AC	Switch,Key Type [X-Bass]
SW712	92LSWICH1401AT	J	AC	Switch,Key Type [Equalizer]
SW713	92LSWICH1401AT	J	AC	Switch,Key Type [Aux]
SW714	92LSWICH1401AT	J	AC	Switch,Key Type [Tuner (Band)]
SW715	92LSWICH1401AT	J	AC	Switch,Key Type [CD Open/Close]
SW716	92LSWICH1401AT	J	AC	Switch,Key Type [On/Stand-by]
SW717	92LSWICH1401AT	J	AC	Switch,Key Type [MD Eject]
SW718	92LSWICH1401AT	J	AC	Switch,Key Type [LP4]
SW719	92LSWICH1401AT	J	AC	Switch,Key Type [LP2]
SW720	92LSWICH1401AT	J	AC	Switch,Key Type [SP]
SW721	92LSWICH1401AT	J	AC	Switch,Key Type [Normal]
SW722	92LSWICH1401AT	J	AC	Switch,Key Type [High]
SW723	92LSWICH1401AT	J	AC	Switch,Key Type [MD Rec]
SW724	QSW-B0002AWZZ	J	AF	Switch,Lever Type [Open/Close]
SW1930	QSW-P0011AWZZ	J	AD	Switch,Push Type [Write Pro]
SW1932	QSW-M0007AWZZ	J	AD	Switch,Push Type [Loading]
SW1933	QSW-M0007AWZZ	J	AD	Switch,Push Type [Record]
SW1934	QSW-M0007AWZZ	J	AD	Switch,Push Type [Play]
SW1936	QSW-M0157AFZZ	J	AD	Switch,Slide Type [Lead In]

MD MECHANISM PARTS

2	LCHSM0089AWZZ	J	AH	LD Base
3	LCHSM0090AWZZ	J	AH	MD Base
4	LHLDX3009AWM1	J	AG	Cartridge Holder Ass'y
5	MLEVF0051AWM1	J	AK	Slider Lever Ass'y
7	MLEVF0046AWFW	J	AE	Arm,Holder
8	MLEVF0047AWFW	J	AC	Plate,Switch
9	MLEVF0054AWFW	J	AC	Lever,Shift
10	MLEVP0095AWZZ	J	AC	Lever,Cam Plate
12	MSPRD0132AWFJ	J	AB	Spring,Loading
14	MSPRP0030AWFJ	J	AB	Spring,Grip
15	MSPRP0031AWFJ	J	AC	Spring,Shaft
16	MSPRT0031AWFJ	J	AC	Spring,Loading Arm
17	MSPRT0032AWFJ	J	AB	Spring,Shift Arm
18	NGERH0085AWZZ	J	AC	Gear,Loading (A)
19	NGERH0086AWZZ	J	AB	Gear,Middle (A)
20	NGERH0087AWZZ	J	AB	Gear,Middle (B)
21	NGERH0088AWZZ	J	AC	Gear,Middle (C)
22	NGERH0089AWZZ	J	AC	Gear,Middle (D)
24	NGERR0004AWZZ	J	AC	Gear,Grip
27	NSFTD0006AWM1	J	AG	Drive Shaft Ass'y
28	NSFTM0019AWFW	J	AC	Shaft,Pickup Slide
30	PCOVS3029AWFW	J	AG	Cover,Shield,Top
31	PCOVS3035AWFW	J	AL	Cover,Shield,Side
32	PCOVS3036AWFW	J	AF	Cover,Shield,Bottom
33	PCUSG0045AWZZ	J	AC	Cushion,Shield Cover
34	RCILH0005AWZZ	J	AR	Magnetic Head
⚠ 35	RCTRH8198AFZZ	J	BM	MD Optical Pickup Ass'y
36	MSPRT0034AWFJ	J	AB	Spring,Ground
501	LX-BZ0040AWZZ	J	AB	Screw,ø1.4×1.5mm
502	LX-BZ0046AWZZ	J	AB	Screw,ø2×2mm
503	LX-BZ0800AFZZ	J	AA	Screw,ø1.4×2.5mm
504	LX-BZ0883AFZZ	J	AB	Screw,ø1.7×5mm
505	LX-JZ0020AWZZ	J	AB	Screw,ø1.4×3mm
506	LX-JZ0022AWZZ	J	AB	Screw,ø1.7×3mm
507	LX-JZ0024AWZZ	J	AB	Screw,ø1.4×4.5mm
509	XBPSD20P03K00	J	AB	Screw,ø2×3mm
510	XSPSN17P03K00	J	AB	Screw,ø1.7×3mm
511	XWSSD14-05000	J	AA	Washer,ø1.4×0.5mm
512	LX-BZ0846AFZZ	J	AB	Screw,ø1.7×3mm
513	LX-JZ0025AWZZ	J	AB	Screw,ø1.4×5mm
M901	RMOTV0038AWZZ	J	AT	MD Spindle Motor Ass'y
M902	92LMTR3167BASY	J	AP	MD Sled Motor Ass'y
M903	92LMTR3167AASY	J	AN	MD Loading Motor Ass'y
SW1930	QSW-P0011AWZZ	J	AD	Switch,Push Type [Write Pro]
SW1932	QSW-M0007AWZZ	J	AD	Switch,Push Type [Loading]
SW1933	QSW-M0007AWZZ	J	AD	Switch,Push Type [Record]
SW1934	QSW-M0007AWZZ	J	AD	Switch,Push Type [Play]
SW1936	QSW-M0157AFZZ	J	AD	Switch,Slide Type [Lead In]

CD MECHANISM PARTS

301	NGERH0011AWZZ	J	AC	Gear,Middle
302	NGERH0012AWZZ	J	AC	Gear,Drive
303	MLEVP0010AWZZ	J	AC	Rail,Guide
304	NSFTM0020AWFW	J	AD	Shaft,Guide
⚠ 306	92LHPC1LXASY	J	BD	Pickup Unit Ass'y
306- 1	————		—	Pickup Unit (Not Replacement Item)
306- 2	NGERR0043AFZZ	J	AC	Gear,Rack
306- 3	MSPRC0961AFZZ	J	AA	Spring,Rack
701	XBSSD26P06000	J	AA	Screw,ø2.6×6mm
702	XHBSD20P05000	J	AA	Screw,ø2×5mm
703	XBBSD20P03000	J	AA	Screw,ø2×3mm
704	LX-WZ1070AFZZ	J	AA	Washer,ø1.5×ø3.8×0.25mm
M1	92LMTR1854BASY	J	AP	Motor with Gear [Sled]
M2	92LMTR3515CASY	J	BA	Motor with Chassis [Spindle]
SW4	QSW-F9001AW01	J	AD	Switch,Push Type [Pickup In]

CABINET PARTS

NO.	PARTS CODE	★	PRICE RANK	DESCRIPTION
202	GCABB1257AWSA	J	AK	Rear Cabinet
203	GEAR3641AASY1	J	AV	CD Lid Gear Unit Ass'y
203- 1	LHLDZ1399AWZZ	J	AF	Holder,Motor
203- 2	LHLDZ1400AWZZ	J	AF	Cover,Motor Holder
203- 3	NGERW0018AWZZ	J	AE	Gear,Worm
203- 4	NGERH0148AWZZ	J	AE	Gear,Reduction (A)
203- 5	NGERH0149AWZZ	J	AE	Gear,Reduction (B)
203- 6	NGERW0019AWZZ	J	AK	Wheel,Worm
204	GCOVA1413AWSA	J	AF	Cover,Bottom
205	GITAR0729AWSA	J		Rear Panel [For U.K.]
205	GITAR0730AWSA	J	AM	Rear Panel [Except for U.K.]
206	GITAS0093AWSA	J	AH	Side Panel,Right
207	GITAS0094AWSA	J	AK	Side Panel,Left
208	GDORF0064AWSM	J	AF	Door,MD
209	GDORF0108AWSA	J	AD	Frame,MD Door
210	HPNLC1297AWSA	J	AR	Top Cabinet
211	JKNBZ0814AWSA	J	AN	Button,Function
212	JKNBZ0815AWSA	J	AG	Button,CD/MD Control
213	JKNBZ0816AWSA	J	AG	Button,Rec
214	LANGK0263AWFW	J	AE	Bracket,Fan Support
215	LANGK0264AWFW	J	AD	Bracket,Tuner PWB
216	LANGQ0013AWFW	J	AD	Bracket,Remote Sensor
217	LCHSM0129AWFW	J	AP	Main Chassis
218	LHLDZ1345AWZZ	J	AD	Holder,MD,Left
219	LHLDZ1346AWZZ	J	AD	Holder,MD,Right
220	LHLDZ1347AWZZ	J	AD	Holder,FL Display
221	LHLDZ1353AWZZ	J	AC	Lid Holder,Left
222	LHLDZ1354AWZZ	J	AC	Lid Holder,Right
223	LPLTP0012AWZZ	J	AD	Plate,Cam
224	MLEVP0107AWSA	J	AD	Lever,CD Lid,A
225	MLEVP0116AWSA	J		Lever,CD Lid,B
226	MSPRD0108AWFJ	J	AC	Spring,Fan Motor
227	MSPRT0022AWZZ	J	AB	Spring,MD Lid
228	NBRGC0003AWZZ	J	AC	Bearing Metal
229	NFANP0001AWZZ	J	AD	Rotary Fan
230	PCOVP1001AWSA	J	AE	Cover,CD Mechanism
231	PCUSG0022AWZZ	J	AB	Cushion,Leg
232	PCUSG0061AWZZ	J	AB	Cushion,CD Lid
233	PFLT-0047AWZZ	J	AB	Felt
234	PRDAR0168AWFW	J	AF	Heat Sink,Sub C
235	PRDAR0194AWFW	J	AP	Heat Sink,Main
236	PSHEP0060AWZZ	J	AE	FL Filter
237	PSHEP0065AWZZ	J	AC	Sheet,Reflector,A
238	PSHEP0066AWZZ	J	AB	Sheet,Reflector,B
239	PSHEP0071AWZZ	J	AF	Sheet,Reflector,C
240	PSLDM9001AWZZ	J	AF	Plate,Shield
⚠ 241	QFSHD0001AWZZ	J	AB	Holder,Fuse
242	TCAUS0028AWZZ	J	AB	Caution Label,Class 3B
243	92LCAUT1706A1	J	AC	Label,Class 3
244	92LCAUT1706B	J	AA	Label,Laser
245	92LCSPR1431C	J	AA	Spring,Ring
246	92LMCUSN1524A	J	AD	Cushion
247	92LNBAND1318A	J	AA	Nylon Band,80mm
248	PSLDC5001AWZZ	J		Copper Sheet,A
249	PSLDC5002AWZZ	J		Copper Sheet,B
250	PSLDC5003AWZZ	J		Copper Sheet,C
251	QCNWN2084AWZZ	J		Lug Wire
255	PSPAZ0043AWZZ	J		PWB Insulator,A
256	GCOVA1393AWSA	J	AE	CD Indicator,Top
257	GCOVA1398AWSA	J	AV	CD Lid Panel
258	GCOVA1399AWSA	J	AL	FL Panel
259	HDECQ0729AWSA	J	AR	CD Lid
260	HDECQ0752AWSA	J	AK	MD Decoration Panel
261	92LLUG007	J		Lug
601	LX-BZ0880AFZZ	J	AC	Screw,ø2×2.2mm
602	LX-EZ0005AWFD	J	AA	Screw,Special
603	LX-EZ0029AWFN	J	AB	Screw,ø2.6×10mm
604	LX-HZ0082AFZZ	J	AA	Screw,ø4×8mm
605	LX-JZ0010AFFD	J	AA	Screw,ø3×10mm
606	XBBSD20P04000	J	AA	Screw,ø2×4mm
607	XEBSD20P14000	J	AA	Screw,ø2×14mm
609	XEBSD26P06000	J	AA	Screw,ø2.6×6mm
610	XEBSD26P08000	J	AA	Screw,ø2.6×8mm
611	XEBSD26P10000	J	AA	Screw,ø2.6×10mm
612	XEBSD30P10000	J	AA	Screw,ø3×10mm
613	XEBSF26P08000	J	AA	Screw,ø2.6×8mm
614	XHBSD30P06000	J	AA	Screw,ø3×6mm
615	XJBSD30P08000	J	AA	Screw,ø3×8mm
616	XJBSD30P10000	J	AA	Screw,ø3×10mm
617	XJBSF30P10000	J	AA	Screw,ø3×10mm
618	XJSSD30P10000	J	AA	Screw,ø3×10mm
619	XWHSD26-05100	J	AA	Washer,ø2.6×10×0.5mm

ACCESSORIES/PACKING PARTS

NO.	PARTS CODE	★	PRICE RANK	DESCRIPTION
⚠ 1	QACCB0012AW00	J	AS	AC Power Supply Cord
⚠ 1	QACCE0007AW00	J	AH	AC Power Supply Cord
2	QANTL0008AWZZ	J	AH	AM Loop Antenna
3	SPAKA0308AWZZ	J	AL	Packing Add.,Left
4	SPAKA0309AWZZ	J	AL	Packing Add.,Right
5	SPAKC1251AWZZ	J	AT	Packing Case
6	SPAKT0027AWZZ	J	AL	Inner Packing Case
7	SPAKT0775AWZZ	J		Pad,Accessories
8	SPAKZ0777AWZZ	J	AB	Sheet,Protection
9	SPAKZ0779AWZZ	J		Pad,Cushion
10	SSAKA0007AWZZ	J	AB	Polyethylene Bag,Accessories
11	SSAKH0063AWZZ	J	AD	Polyethylene Bag,Unit
12	TCAUZ0057AWZZ	J	AA	Sheet,Notice
13	TGAN-3170UMZZ	J	AE	Warranty Card [For U.K. Only]
14	TINSE0377AWZZ	J	AK	Operation Manual [For U.K.]
14	TINSZ0693AWZZ	J	AW	Operation Manual [Except for U.K.]
15	TINSE0376AWZZ	J	AD	Quick Guide [For U.K. Only]
16	TLABE0553AWZZ	J		Label,Bar Code
17	92LBAG1770A	J	AB	Polyethylene Bag,AC Power Supply Cord
18	92LFANT1535A	J	AF	FM Antenna
19	RRMCG0278AWSA	J	AW	Remote Control
19- 1	GFTAB1038AWSA	J		Battery Lid,Remote Control
20	————		—	Battery (Not Replacement Item)

P.W.B. ASSEMBLY (Not Replacement Item)

PWB-A1,2	92LPWB3639MANS	J	—	Main/Aux Input (Combined Ass'y)
PWB-B1~3	92LPWB3639DPLS	J	—	Display/LED/CD Lid Open/Close (Combined Ass'y)
⚠ PWB-C1~3	92LPWB3639TUNS	J	—	Tuner/Power/Power Amp. (Combined Ass'y)
PWB-D	92LPWB3639CDUS	J	—	CD Servo
PWB-E	92LPWB3503MDS	J	—	MD Main
PWB-F	QPWBF0027AWZZ	J	AD	CD Motor (PWB Only)
PWB-G1,2	QPWBF0649AWZZ	J	AC	MD Mechanism Switch/MD Loading (PWB Only)

OTHER SERVICE PARTS

QCNWK0059AFZZ	J	AF	Extension Connector (2Pin)
QCNWK0108AFZZ	J	AL	Extension Flat Cable (28Pin)
QCNWK0132AFZZ	J	AP	Extension Flat Cable (9Pin)
RRCDT0101AFZZ	J	CB	Test Disc,High Reflection
RRCDT0103AFZZ	J	BK	Head Adjusting Transparend Disc
RUNTK0581AFZZ	J	BK	Extension PWB for Service
UDSKA0004AFZZ	J	AZ	CD Pickup Lens Cleaner
88GMMD-213AS	J	BT	Low Reflection Disc,Pre-Adjustment Mini Disc (TEAC Test MD)
88GMMD-318	J	BF	Low Reflection Disc,Pre-Adjustment Mini Disc (TEAC Test MD)

CP-E9000H

SPEAKER BOX PARTS

901	CPNLS1030AWSA	J	BB	Front Panel Ass'y
902	CCAB-1196AWSA	J	BD	Speaker Box Ass'y
903	CWAKP1048AWSA	J	AV	Net Frame Ass'y
905	QCNWN1930AWZZ	J	AN	Lead Wire Ass'y (With Capacitor C1,2)
906	LHLDZ8001AWSA	J	AD	Catching Holder
907	PCUSG0022AWZZ	J	AB	Cushion,Leg
908	XJBSD40P12000	J	AA	Screw,ø4×12mm
909	XJBSF30P10000	J	AA	Screw,ø3×10mm
910	XJSSD30P10000	J	AA	Screw,ø3×10mm
912	QTANA9007AWZZ	J	AF	Terminal,Speaker
913	XJBSD40P20000	J	AA	Screw,ø4×20mm
914	PFLT-0057AWZZ	J		Felt
SP1,2	RSPA10013AW4W	J	AX	Woofer

NO.	PARTS CODE	★	PRICE RANK	DESCRIPTION
SP3,4	RSPA00011AW6T	J	AQ	Tweeter

ACCESSORIES/PACKING PARTS

1	SPAKA0303AWZZ	J	AK	Packing Add.,Top
2	SPAKA0304AWZZ	J	AK	Packing Add.,Bottom
3	SPAKT0026AWZZ	J	AL	Packing Case
4	SSAKH0055AWZZ	J		Miramat Bag
5	CCNWN1938AWZZ	J		Speaker Cord Ass'y
6	TSPC-0865AWZZ	J		Label,Specifications

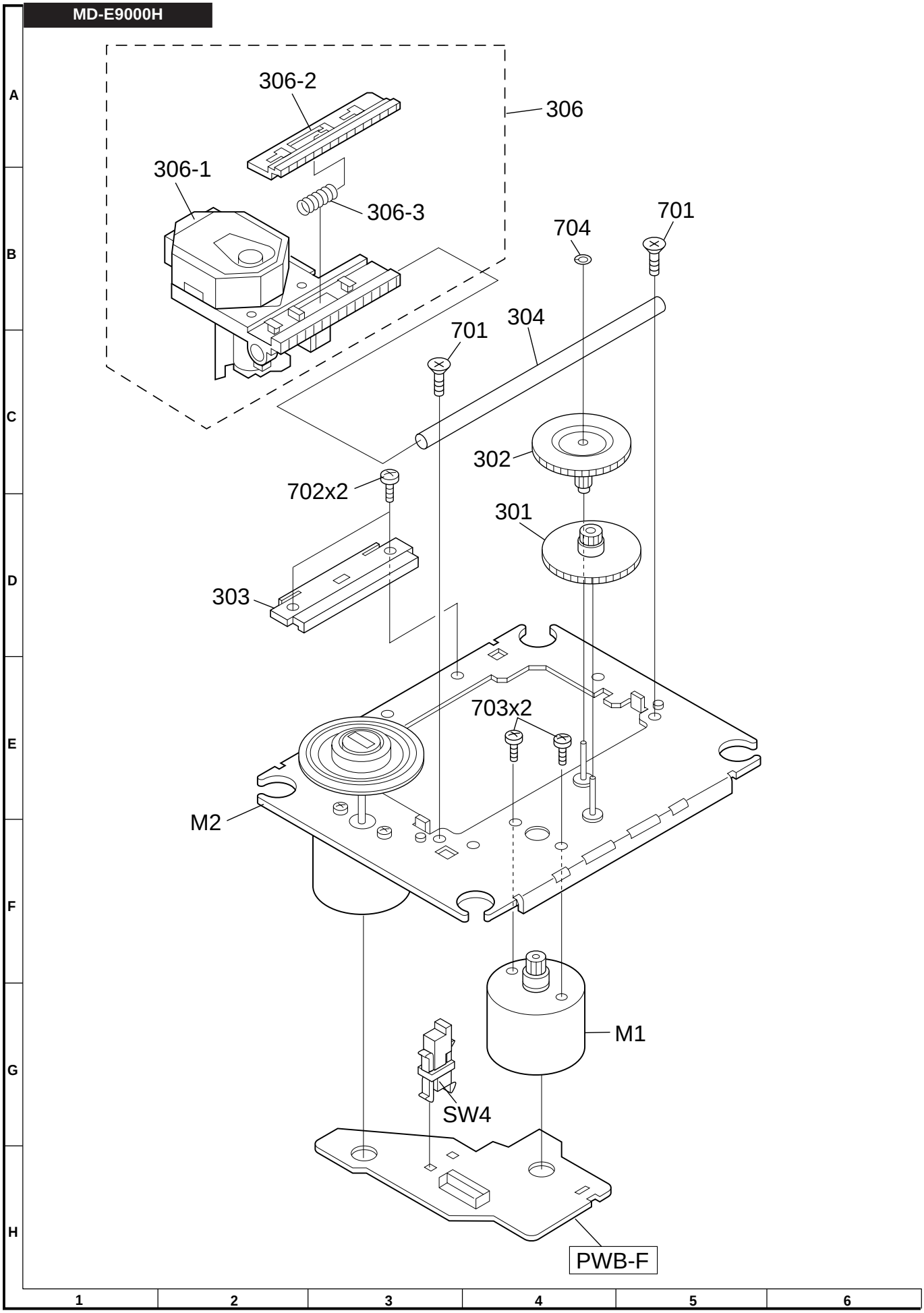


Figure 8 CD MECHANISM EXPLODED VIEW

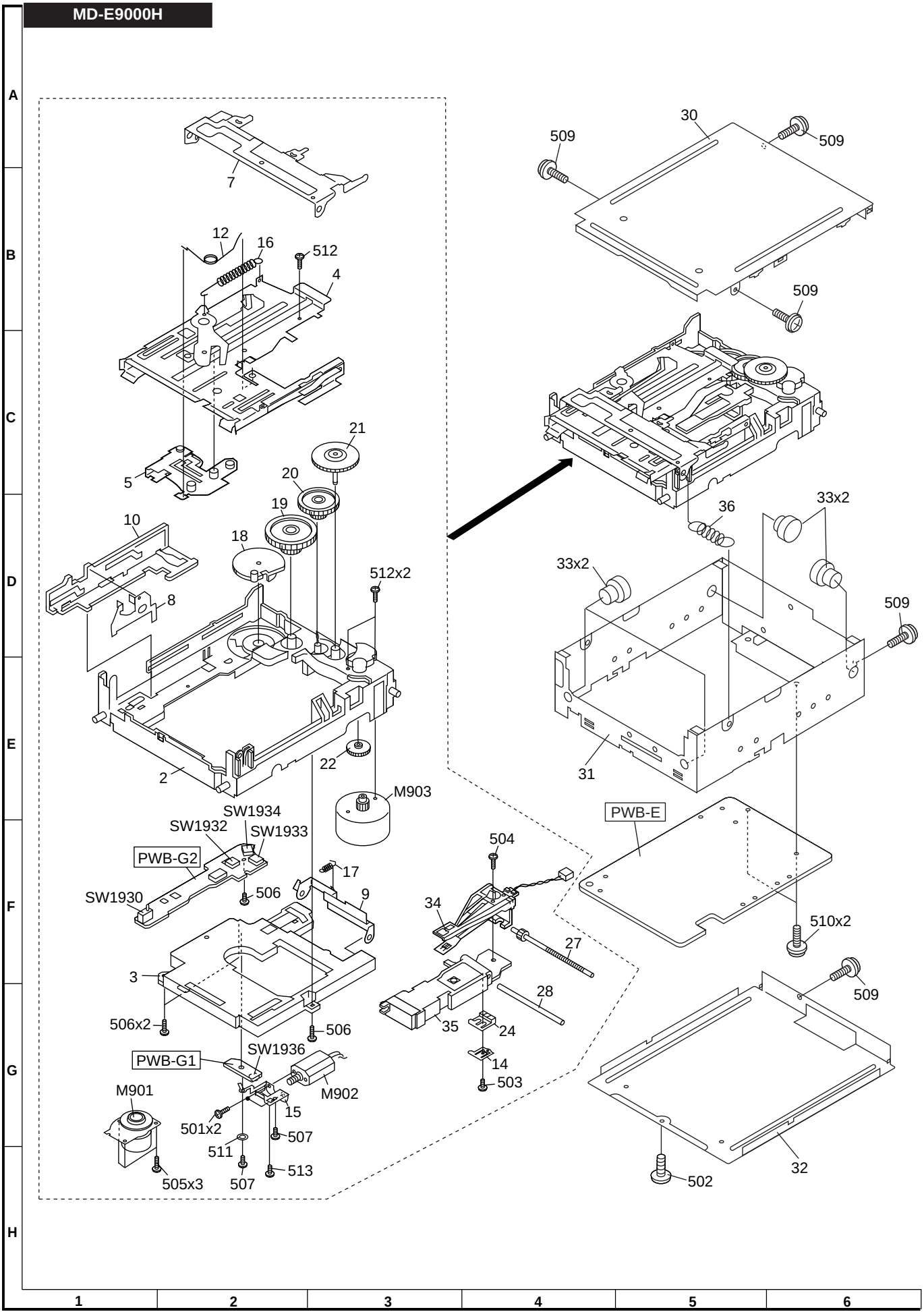


Figure 9 MD MECHANISM EXPLODED VIEW

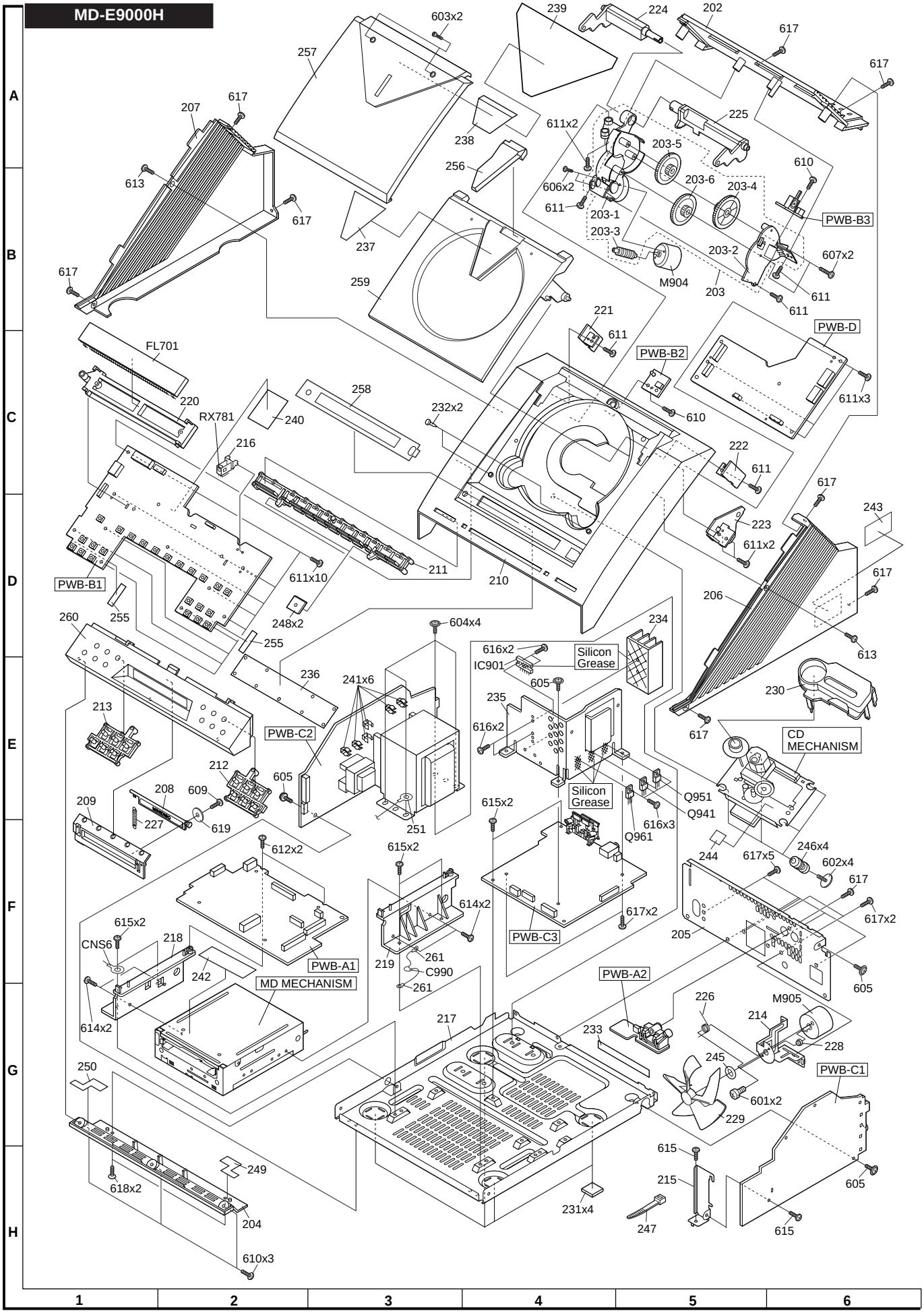


Figure 10 CABINET EXPLODED VIEW

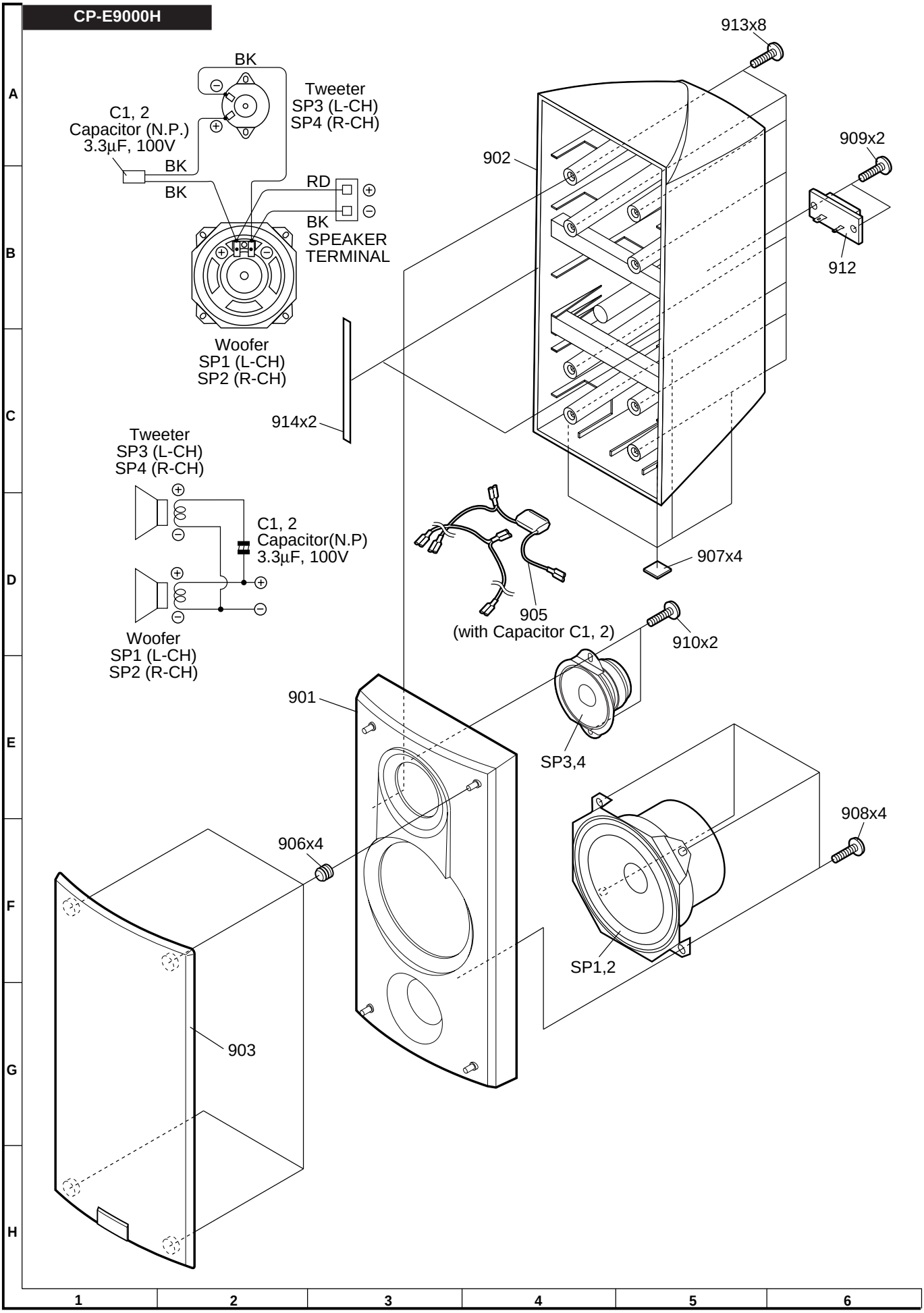


Figure 11 SPEAKER EXPLODED VIEW

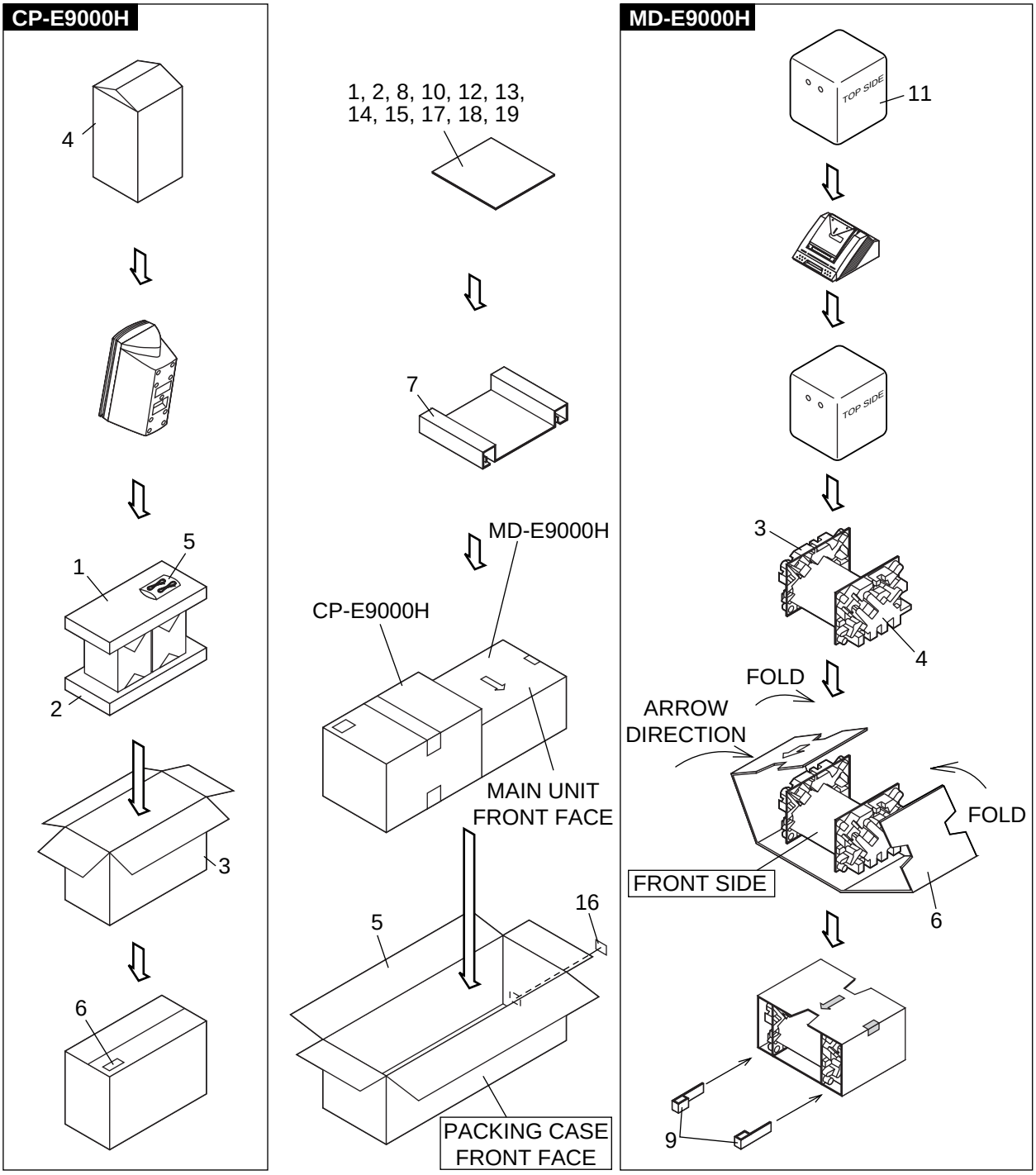
PACKING METHOD (FOR U.K. ONLY)

MD-E9000H

1. AC Power Supply Cord	QACCB0012AW00
2. AM Loop Antenna	QANTL0008AWZZ
3. Packing Add., Left	SPAKA0308AWZZ
4. Packing Add., Right	SPAKA0309AWZZ
5. Packing Case	SPAKC1251AWZZ
6. Inner Packing Case	SPAKT0027AWZZ
7. Pad, Accessories	SPAKT0775AWZZ
8. Sheet, Protection	SPAKZ0777AWZZ
9. Pad, Cushion	SPAKZ0779AWZZ
10. Polyethylene Bag, Accessories	SSAKA0007AWZZ
11. Polyethylene Bag, Unit	SSAKH0063AWZZ
12. Sheet, Notuce	TCAUZ0057AWZZ
13. Warranty Card	TGAN-3170UMZZ
14. Operation Manual	TiNSE0377AWZZ
15. Quick Guide	TiNSE0376AWZZ
16. Label, Bar Code	TLABE0553AWZZ
17. Polyethylene Bag, AC Power Supply Cord	92LBAG1770A
18. FM Antenna	92LFANT1535A
19. Remote Control	RRMCG0278AWSA

CP-E9000H

1. Packing Add., Top	SPAKA0303AWZZ
2. Packing Add., Bottom	SPAKA0304AWZZ
3. Packing Case	SPAKT0026AWZZ
4. Miramat Bag	SSAKH0055AWZZ
5. Speaker Cord Ass'y	CCNWN1938AWZZ
6. Label, Specifications	TSPC-0865AWZZ



MD-E9000H

SHARP

COPYRIGHT © 2001 BY SHARP CORPORATION

ALL RIGHTS RESERVED.

No part of this publication may be reproduced,
stored in a retrieval system, or transmitted in
any form or by any means, electronic, mechanical,
photocopying, recording, or otherwise, without
prior written permission of the publisher.

SHARP CORPORATION
AV Systems Group
Audio Systems Division
Higashihiroshima, Hiroshima 739-0192, Japan

Printed in Japan

A0108-1082DS•HA•M

SG • SK